

Exhibit 12 Part 17

Part 8 of Attachment L to the Allocation Recommendation Report (ARR2663-ARR2759)

United States' Motion to Enter Consent Decree,
United States v. Alden Leeds, Inc. et al., Civil Action No. 22-7326 (D.N.J.)

Allocation Facility Cmass Calculation

PSE&G Corp.	4th Street	Harrison	NJ	07029
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	4,994.42	100.00%	190.99	0.00%	833.40	100.00%	-	5,185.41	1.018817E-2	52.83
Lead	100.00%	-	100.00%	17.59	0.00%	76.76	100.00%	551.7	569.32	1.018817E-2	5.8
Mercury	100.00%	39.3	100.00%	-	0.00%	-	100.00%	-	39.3	1.018817E-2	0.4
HPAHs	100.00%	403.57	100.00%	580.50	0.00%	2,533.10	100.00%	255,499.5	256,483.6	1.018817E-2	2,613.1
LPAHs	100.00%	2,719.18	100.00%	387.00	0.00%	1,688.74	100.00%	262,287.1	265,393.31	1.018817E-2	2,703.87
PCBs	100.00%	10.16	100.00%	-	0.00%	-	100.00%	-	10.16	1.018817E-2	0.1
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	52.83	2.516E-5	1.736E-5
Lead	0.01	3,200,000.00	5.8	1.813E-6	1.813E-8
Mercury	0.95	42,000.00	0.4	9.533E-6	9.057E-6
HPAHs	0.05	240,000.00	2,613.1	1.089E-2	5.444E-4
LPAHs	0.01	170,000.00	2,703.87	1.591E-2	1.591E-4
PCBs	12.87	26,000.00	0.1	3.981E-6	5.124E-5
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

PSE&G Corp.	4th Street	Harrison	NJ	07029
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	1.872E-2	52.83	39,264.57	1.872E-2	1.292E-2
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	1.973E-3	5.8	6,307.26	1.973E-3	1.973E-5
Mercury	0.95	42,000.00	4,322.53	41,955.96	9.092E-3	0.4	381.46	9.092E-3	8.637E-3
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	5.901E-2	2,613.1	11,549.48	5.901E-2	2.951E-3
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	8.809E-2	2,703.87	12,271.01	8.809E-2	8.809E-4
PCBs	12.87	26,000.00	20,066.54	25,795.56	5.063E-4	0.1	13.06	5.063E-4	6.516E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

PSE&G Corp.	4th Street	Harrison	NJ	07029
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	Facility has both NJPDES Permits for discharge directly to the Passiac River and PVSC Sewer Permits
24	# hours/per day discharged	1978 PVSC Permit
7	#days/week discharged	1978 Waste Effluent Survey
52	#weeks/yr discharged	1985/86 PVSC Permit Application
30,178,920	calc gal/yr discharge PAP00132788, PAP00134897, PAP00140305, PAP00140813, PAP00428220, PAP00140810	1990 PVSC Permit Application
		1991 PVSC Permit Application
1902	Yr Ops started	
2020	Yr Ops ceased	
118	calc #yrs facility operated	
Copper (Cu)		
118	#yrs facility discharged PAP00140813, PAP00428220	1983 PSA
0.08	calc mg/L COC discharged	1990 PVSC Sewer Application
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,024.39	calc kg COC discharged	
Lead (Pb)		
118	#yrs facility discharged	
0.01	calc mg/L COC discharged PAP00140813, PAP00428220	1990 PVSC Sewer Application
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
94.35	calc kg COC discharged	
Mercury (Hg)		
118	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
118	#yrs facility discharged	1978 PVSC Permit and Waste Effluent Survey
3.85	calc mg/L O&G PAP00132788, PAP00134897, PAP00140305, PAP00140810	1985/86 PVSC Permit Application
25%	% O&G that is considered PAHs	1991 PVSC Permit Application
60%	% PAHs considered as HPAHs	
1	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
7,784.01	calc kg COC discharged	
LPAHs		
118	#yrs facility discharged	1978 PVSC Permit and Waste Effluent Survey
3.85	calc mg/L O&G PAP00132788, PAP00134897, PAP00140305, PAP00140810	1985/86 PVSC Permit Application
25%	% O&G that is considered PAHs	1991 PVSC Permit Application
40%	% PAHs considered as LPAHs	
0	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
5,189.34	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
118	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
75	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
1,024.39	kg Copper	
94.35	kg Lead	
-	kg Mercury	
7,784.01	kg HPAHs	
5,189.34	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
24	# hours/day discharged	1978 PVSC Permit and Waste Effluent Survey
7	# days/week discharged	1985/86 PVSC Permit Application
52	# weeks/yr discharged	
176,472,207	# gals/yr directly discharged	PAP-00134898
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft ² per acre	
1902	Yr Ops started	
2020	Yr Ops ceased	
118	calc #yrs facility operated	
Copper (Cu)		
118	#yrs facility discharged	1980 NPDES Permit
-	calc mg/L COC discharged PAP0014073, PAP00140813, PAP00428220	1990 PVSC Permit Application
3.785	L per gallon (Merck Index)	PAP-00130839
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
118	#yrs facility discharged	
0.0070	calc mg/L COC discharged PAP00140813, PAP00428220	1990 PVSC Permit Application
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
551.72	calc kg COC discharged	
Mercury (Hg)		
118	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
118	#yrs facility discharged	1978 PVSC Permit and Waste Effluent Survey
3.50	calc mg/L COC discharged PAP00132788, PAP00134897, PAP0014073, PAP00140315	1985/86 PVSC Permit Application
3.785	L per gallon (Merck Index)	1980 NPDES Permit
0.000001	kg per mg (Merck Index)	5#/day oil & Grease discharge limit x 60% as HPAH x 41 years = 44895 # = 20362.7 kg Credit
275,862.24	calc kg COC discharged	
LPAHs		
118	#yrs facility discharged	1978 PVSC Permit and Waste Effluent Survey
3.50	calc mg/L COC discharged PAP00132788, PAP00134897, PAP0014073, PAP00140315	1985/86 PVSC Permit Application
3.785	L per gallon (Merck Index)	1980 NPDES Permit
0.000001	kg per mg (Merck Index)	5#/day oil & Grease discharge limit x 40% as LPAH x 41 years = 29930 # = 13575.1 kg Credit
275,862.24	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
118	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
75	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
551.72	kg Lead	
-	kg Mercury	
255,499.54	kg HPAHs	
262,287.14	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION		
	32 ACRES - TOTAL SITE AREA (acres)	FDR, PDF PAGE 1	
	16 ACRES - AFFECTED AREA	The site is located on historic fill material. Unpaved gravel covered areas in the southwesterly area of the Site periodically flood to depths exceeding 1.5 feet. (PAP-00130585-6).	
	*AREA OF POTENTIAL OVERLAND FLOW DISCHARGE TO PASSAIC RIVER		
	4,046.86 METERS ² /ACRE	CONVERSION TO METERS	
	64,750 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	6 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED to Passaic.	
	1902 Year site operations began	Commencing in 1902 through September 1926, when the Plant commenced commercial operations, the Site was a satellite facility utilized solely for the storage of oil and manufactured gas. (PAP-00356759)	Newark Gas leased its Plant properties and franchises to the United Gas Improvement Company in 1898 which assigned the lease that same year to the Essex and Hudson Gas Company. Public Service Corporation of New Jersey acquired in 1903 the plant, property " and franchises of the Essex and Hudson Gas Company, which included the Site. The Essex and Hudson Gas Company and Newark Gas Company merged with and into PSE&G in 1939. (PAP-00000000-00000000)
	2020 Year site operations ceased	FDR PDF PAGE 1, Operator: 1902 or 1909 to present (PAP-00140468; PAS-00007043-44). Owner: 1884 to present (PAS-00007043-44). On March 4, 2014, PSE&G submitted a Remedial Investigation Timeframe Extension which was approved by NJDEP on March 4, 2014. Therefore, the current applicable timeframe for the completion of a remedial investigation and submission of an RIR for the Site is May 7, 2016. (PAP-00130579)	
	118 NUMBER YEARS DISCHARGE		
	764 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,963 KG/M ³ SOIL DENSITY	Fill reported as silt, clay sand and gravel. Bulk density range 1442 KG/M ³ to 2483 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	The historic fill contains heterogeneous mixtures of predominantly sand and gravel that can occur with cinders and other anthropogenic debris such as brick, wood, concrete, coal fragments. Portions of the historic fill material may also contain tar material and oil material (TM and OM) in areas . The Fill Unit is a continuous water-bearing unit that comprises the shallow aquifer beneath the Site, where the depth to groundwater typically ranges from 1 to 8 feet bsg. (PAP-00130585) historical MGP structures (PAP-00130582)
	1,499,825 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	118 YEARS DISCHARGED		
	3,330 MG/KG (MAX CONCENTRATION)	PAP-00129400 (0.5 to 1 ft)	
	0.000001 kg per mg (Merck Index)		
	4,994 KILOGRAMS DISCHARGED		
Lead (Pb)	118 YEARS DISCHARGED		
	0 MG/KG MAX CONCENTRATION)	FDR PDF PAGE 13 MAX CONCENTRATIONS OF 4,890 mg/kg Found in Onsite Soils. Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Mercury (Hg)	118 YEARS DISCHARGED		
	26.2 MG/KG (MAX CONCENTRATION)	28.2 MG/KG FROM TABLE 3-2 SAMPLE PES-25 (PAP-00129413)	
	0.000001 kg per mg (Merck Index)		
	39 KILOGRAMS DISCHARGED		

DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
PAHs (listed in Benzoic Pyrene Equivalent conversion table)			
	118 YEARS DISCHARGED		
	269.1 MG/KG (TOTAL PAH MAX CONCENTRATION)		PAP-00128657, 1.5-2 ft sample
	0.000001 kg per mg (Merck Index)		
	404 KILOGRAMS DISCHARGED		
PAHs (others detected)		Data below the Benzo(a)pyrene Equivalent Table	
	118 YEARS DISCHARGED		
	1,813 MG/KG (TOTAL PAH MAX CONCENTRATION)	PAP-00128657, 1.5-2 ft sample	
	0.000001 kg per mg (Merck Index)		
	2,719 KILOGRAMS DISCHARGED		
PCBs			
	90 YEARS DISCHARGED		
	8.88 MG/KG (MAX CONCENTRATION)	PAP-00129059 1.5-2 ft post-excavation sample	
	0.000001 kg per mg (Merck Index)		
	10 KILOGRAMS DISCHARGED		
DDx			
	118 YEARS DISCHARGED within DDx Timeline	HISTORIC FILL OU2 COC CONCENTRATION REFERENCE TABLE	
	0 MG/KG (MAX CONCENTRATION)	NONE REPORTED in site soil	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Dieldrin			
	118 YEARS DISCHARGED	NONE REPORTED in site soil	
	0 MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Dioxins/Furans			
	118 YEARS DISCHARGED		
	0 MG/KG (MAX CONCENTRATION)	2,3,7,8-TCDD was detected at concentrations up to 14,600 pg/g (picogram/gram) (PAP-00128893). However, Dioxins/Furans concentration set as 0 mg/kg based on the conclusion accepted by NJDEP that the 2,3,7,8 TCDD detected was attributed to migration from the Passaic River and was not associated with operations at the Harrison site (PAP-00128997-8)	
	0.000001 kg per mg (Merck Index)		
	0.00 KILOGRAMS DISCHARGED		
SUMMARY CMASS ESTIMATES:			
4994.42 kg Copper			
0.00 kg Lead			
39.30 kg Mercury			
403.57 kg PAHs (Benzo(a)pyrene Equivalent)			
2719.18 kg PAHs (Other)			
10.16 kg PCBs			
0.00 kg DDx			
0.00 kg Dieldrin			
0.00 kg Dioxins/Furans			
8166.62 TOTAL MASS (KG) DISCHARGED FROM SURFACE SOIL			

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	200.000	1.0	200.0000
Benzo(a)anthracene	240.000	0.1	24.0000
Benzo(b)fluoranthene	160.000	0.1	16.0000
Benzo(k)fluoranthene	52.000	0.01	0.5200
Chrysene	260.000	0.001	0.2600
Dibenz(a,h)anthracene	20.000	1.0	20.0000
Indeno(1,2,3-cd)pyrene	83.000	0.1	8.3000

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg	
Total Benzo(a)pyrene Equivalents =	269.1

PAP-00128657, 1.5-2 ft sample	
Anthracene	180
Acenaphthene	120
Acenaphthylene	43
Fluorene	170
Naphthalene	100
Phenanthrene	1000
2-Methylnaphthalene	200
SUM	1813

Allocation Facility Cmass Calculation

PSE&G Corp.	155 Raymond Blvd.	Newark	NJ	07105
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	5,838.11	100.00%	-	0.00%	-	100.00%	-	5,838.11	1.018817E-2	59.48
Lead	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Mercury	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	37.3	100.00%	164.47	0.00%	1,754.37	100.00%	34.1	235.86	1.018817E-2	2.4
LPAHs	100.00%	167.25	100.00%	109.65	0.00%	1,169.58	100.00%	22.7	299.62	1.018817E-2	3.05
PCBs	100.00%	1.97	100.00%	-	0.00%	0.04	100.00%	-	1.97	1.018817E-2	0.02
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

PSE&G Corp.	155 Raymond Blvd.	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	59.48	2.832E-5	1.954E-5
Lead	0.01	3,200,000.00	0	0	0
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	2.4	1.001E-5	5.006E-7
LPAHs	0.01	170,000.00	3.05	1.796E-5	1.796E-7
PCBs	12.87	26,000.00	0.02	7.735E-7	9.954E-6
DDx	1.37	27,000.00	0	3.251E-11	4.454E-11
Dieldrin	0.13	390.00	0	4.924E-9	6.401E-10
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

PSE&G Corp.	155 Raymond Blvd.	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	2.108E-2	59.48	44,206.91	2.108E-2	1.454E-2
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	0	0	0	0	0
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	5.427E-5	2.4	10.62	5.427E-5	2.713E-6
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	9.945E-5	3.05	13.85	9.945E-5	9.945E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	9.836E-5	0.02	2.54	9.836E-5	1.266E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	3.423E-8	0	0	3.423E-8	4.689E-8
Dieldrin	0.13	390.00	1.27	389.99	1.489E-4	0	0.06	1.489E-4	1.936E-5
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

PSE&G Corp.	155 Raymond Blvd.	Newark	NJ	07105
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day	March 1975 Letter states only sanitary wastes went to PVSC
24	# hours/per day discharged	1980 NPDES Permit
7	#days/week discharged	1975 Waste Effluent Survey
52	#weeks/yr discharged	
8,047,000	calc gal/yr discharge	PAP-00130793, PAP-00130819
1915	Yr Ops started	
2020	Yr Ops ceased	
105	calc #yrs facility operated	
Copper (Cu)		
105	#yrs facility discharged	
-	calc mg/L COC discharged	PAP-00130839, intake water contains 1 mg/l Cu
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
105	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
105	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
105	#yrs facility discharged	
10.00	calc mg/L O&G	PAP-00130839
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
0.6	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,918.85	calc kg COC discharged	
LPAHs		
105	#yrs facility discharged	
10.00	calc mg/L O&G	PAP-00130839
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0.40	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,279.23	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
0.000030	calc mg/L COC discharged	PAP-00130879
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.04	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
0.000001	calc mg/L COC discharged	PAP-00130879
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.00101	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
0.0000019	calc mg/L COC discharged	PAP-00130879
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.00220	calc kg COC discharged	
Dioxins/Furans		
105	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
75	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
1,918.85	kg HPAHs	
1,279.23	kg LPAHs	
0.0448	kg PCBs	
0.0010	kg DDx	
0.0022	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
24	# hours/day discharged	3 Outfalls permitted to the Passaic River (1985 PAP-00131288-89)
7	# days/week discharged	1975 Waste Effluent Survey
52	# weeks/yr discharged	1980 NJPDES Permit Renewal
234,536	# gals/yr directly discharged PAP00130793, PAP00130820, PAP00353627	
1915	Yr Ops started	
2020	Yr Ops ceased	
105	calc #yrs facility operated	
Copper (Cu)		
105	#yrs facility discharged	
-	calc mg/L COC discharged	PAP-00130839, intake water contains 1 mg/l Cu therefore a credit is
3.785	L per gallon (Merck Index)	applied reducing copper concentration to zero.
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
105	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
105	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
105	#yrs facility discharged	PAP-00130839
10.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
0.60	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
55.93	calc kg COC discharged	
LPAHs		
105	#yrs facility discharged	
10.00	calc mg/L O&G	PAP-00130839
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0.40	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
37.28	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
38	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
105	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
75	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
41	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
34.09	kg HPAHs	
22.73	kg LPAHs	
-	kg PCBs	
-	kg DDx	

-	kg Dieldrin	
-	kg Dioxins/Furans	

DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	61 ACRES - TOTAL SITE AREA (acres)	According to a March 12, 1975 Waste Effluent Survey, the acreage was 61 acres.] (PAP-00130792).	
	33 ACRES - AFFECTED AREA *AREA OF POTENTIAL OVERLAND FLOW DISCHARGE TO PASSAIC RIVER	The site is located on historic fill material - GOOGLE MAPS SHOWS SITE INCLUDES 0.5 MILES PASSAIC RIVER SHORELINE.	
	4,046.86 METERS ² /ACRE	CONVERSION TO METERS	
	133,546 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	13 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED to Passaic.	
	1915 Year site operations began	Operator: 1915 to Present (PAP-00131333); Owner: 1915 to Present (PAP-00354146)	
	2020 Year site operations ceased		
	105 NUMBER YEARS DISCHARGE	PSE&G obtained the site through a series of transactions starting in approximately 1915 (PAP-00354146).	
	1,402 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	2,251 KG/M ³ SOIL DENSITY	Fill reported as silt, clay sand and gravel. Bulk density range 2002 KG/M ³ to 2499 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	
	3,155,734 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	105 YEARS DISCHARGED 1,850 MG/KG (MAX CONCENTRATION)	FDR PDF PAGE 10 MAX CONCENTRATIONS OF COC Found in Onsite Soils	
	0.000001 kg per mg (Merck Index) 5,838 KILOGRAMS DISCHARGED	PAP-00139965	
Lead (Pb)	105 YEARS DISCHARGED 0 MG/KG MAX CONCENTRATION)	FDR PDF PAGE 10 MAX CONCENTRATIONS OF 1,080 mg/kg Found in Onsite Soils. Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED	PAP-00139965	
Mercury (Hg)	105 YEARS DISCHARGED 0.0 MG/KG (MAX CONCENTRATION)	FDR PDF PAGE 10 MAX CONCENTRATIONS OF 3.5 mg/kg Found in Onsite Soils PAP-00139966. Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		

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DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)			
	105 YEARS DISCHARGED		
	11.8 MG/KG (TOTAL PAH MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	37 KILOGRAMS DISCHARGED		
PAHs (others detected)			
	105 YEARS DISCHARGED		
	53.00 MG/KG (TOTAL PAH MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	167 KILOGRAMS DISCHARGED		
PCBs			
	90 YEARS DISCHARGED		
	0.73 MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	2 KILOGRAMS DISCHARGED		
DDx			
	105 YEARS DISCHARGED within DDX Timeline		
	0 MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Dieldrin			
	105 YEARS DISCHARGED		
	0 MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Dioxins/Furans			
	105 YEARS DISCHARGED		
	0 MG/KG (MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index)		
	0.00 KILOGRAMS DISCHARGED		
SUMMARY CMASS ESTIMATES:			
	5838.11 kg Copper		
	0.00 kg Lead		
	0.00 kg Mercury		
	37.30 kg PAHs (Benzo(a)pyrene Equivalent)		
	167.25 kg PAHs (Other)		
	1.97 kg PCBs		
	0.00 kg DDx		
	0.00 kg Dieldrin		
	0.00 kg Dioxins/Furans		
	6,044.64 TOTAL MASS (KG) DISCHARGED FROM SURFACE SOIL		

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PAP-00132435, sample 1-S
Historic fill was not a consideration for PAH concentrations for the purpose of this calculation.

FDR PDF PAGE 6 - PCBs were detected in many of the drums of oil that were drained from pieces of electrical equipment (i.e., oil circuit breakers) (PAP-00726563). Sampling of the oil removed from the oil circuit breakers revealed PCB concentrations from 6 ppm to 33,000 ppm. Seven soil samples were also collected below six of the Oil Circuit Breakers. Four of the samples contained PCBs ranging from 170 to 730 µg/kg. The remaining three oil circuit breakers were determined to contain less than 2 ppm PCBs; accordingly no additional soil samples were collected. The interim soil action level for PCBs used by NJDEPE at the time was 1,000 to 5,000 µg/kg. As none of the samples contained PCBs at these concentrations, no further sampling was recommended for this area (PAP-00726575-76).

TEF FOR CHRYSENE LISTED AS 0.01 BY OTHERS

PAP-00132435, sample 1-S
Historic fill was not a consideration for PAH concentrations for the purpose of this calculation.

Sum of Benzoic Pyrene Equivalent conversion concentrations.
https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample.

Contaminant	MAX CONC. (mg/kg) SAMPLE 1-S 10.5-11 FT 6/23/1998 (PAP-00132435)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	8.400	1.0	8.4000
Benzo(a)anthracene	9.100	0.1	0.9100
Benzo(b)fluoranthene	7.800	0.1	0.7800
Benzo(b)fluoranthene	7.800	0.1000	0.7800
Benzo(k)fluoranthene	3.000	0.01	0.0300
Chrysene	9.600	0.001	0.0096
Dibenz(a,h)anthracene	0.710	1.0	0.7100
Indeno(1,2,3-cd)pyrene	2.000	0.1	0.2000

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

48.410	Total Benzo(a)pyrene Equivalents =	11.8

	ALTERNATE MAX CONC. (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	5.000	1.0	5.0000
Benzo(a)anthracene	12.000	0.1	1.2000
Benzo(b)fluoranthene		0.1	0.0000
Benzo(k)fluoranthene	5.800	0.01	0.0580
Chrysene	9.800	0.001	0.0098
Dibenz(a,h)anthracene	0.000	1.0	0.0000
Indeno(1,2,3-cd)pyrene	2.400	0.1	0.2400

35.000	Total Benzo(a)pyrene Equivalents =	6.5
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PSE&G Corp.

155 Raymond Blvd.		Newark	NJ	07105			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS
3.018E-5	5.0%	Occasional Noncompliance	PVSC Annual Reports noted discharges of oil from the facility to the Passaic River in 1973 and 1974. In January 1991, PSEG was issued a Notice of Violation by the NJDEP for the January 28, 1991 discharge of kerosene from a leaking underground fill line at its Essex Generating Station at 155 Raymond Blvd. (PAP-00131028-29; PAP-00131033; PAP-00131037). According to the Environmental Documentation of Demolition Phase 3 Report, Essex Generating Station, during the structural demolition of the decommissioned Essex Generating Station concrete surfaces located within two areas of the Essex Generating Station were observed to be oil stained. These areas were the concrete floor in the turbine building; and the two underlying concrete slabs where the oil pots containing percent levels of PCBs were removed from the potential transformer cabinets. The sample collected below potential transformer 1 contained 13,000 ppm of PCBs, and the sample collected below potential transformer 4 contained 60 ppm. A mineral oil leak from a transformer, located hundreds of feet from the Passaic River or Lawyer’s Ditch, occurred on September 16-17, 1993. No discharge to the Passaic River occurred. The mineral oil from the transformer and from the spill area was analyzed and shown to contain 10-11 ppm PCBs. It was estimated that 900 gallons of mineral oil were discharged to the gravel/soil beneath the transformer.		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.565E-5

4th Street		Harrison	NJ	07029			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS

PSE&G Corp.

155 Raymond Blvd.		Newark	NJ	07105			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS
1.583E-2	5.0%	Occasional Noncompliance	PVSC Annual Reports noted discharges of oil from the facility to the Passaic River in 1973 and 1974. In January 1991, PSEG was issued a Notice of Violation by the NJDEP for the January 28, 1991 discharge of kerosene from a leaking underground fill line at its Essex Generating Station at 155 Raymond Blvd. (PAP-00131028-29; PAP-00131033; PAP-00131037). According to the Environmental Documentation of Demolition Phase 3 Report, Essex Generating Station, during the structural demolition of the decommissioned Essex Generating Station concrete surfaces located within two areas of the Essex Generating Station were observed to be oil stained. These areas were the concrete floor in the turbine building; and the two underlying concrete slabs where the oil pots containing percent levels of PCBs were removed from the potential transformer cabinets. The sample collected below potential transformer 1 contained 13,000 ppm of PCBs, and the sample collected below potential transformer 4 contained 60 ppm. A mineral oil leak from a transformer, located hundreds of feet from the Passaic River or Lawyer’s Ditch, occurred on September 16-17, 1993. No discharge to the Passaic River occurred. The mineral oil from the transformer and from the spill area was analyzed and shown to contain 10-11 ppm PCBs. It was estimated that 900 gallons of mineral oil were discharged to the gravel/soil beneath the transformer.		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.346E-2

4th Street		Harrison	NJ	07029			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS

3.192E-2	10.0%	Periodic Noncompliance	<p>For Public Disclosure by Consent of the Participating Allocation Parties and EPA (Fall 2022)</p> <p>On September 25, 1987, the EPA found PSE&G Harrison in violation of general facility requirements pertaining to PCBs. A penalty of \$8,500 was assessed (PAS-00104676-77). Note: The nature of the violation was not described in further detail. A 1988 inspection found several violations concerning documentation and storing PCB waste more than one year after being placed into storage for disposal (PAP-00140392-95; PAP-00140436-37). In November 2004 and April 2010, PSE&G voluntarily reported un-manifested PCB shipment from the Harrison Gas Plant facility. In April 2011, PSE&G and U.S. EPA entered into a Consent Agreement and Final Order due to violating TSCA on three occasions by storing PCB waste and/or shipping PCB waste for disposal without identifying it as PCB on EPA Manifest Form 8700-22 (PAP-00130040-47; PAP-00130049-55). Facility manufactured gas from oil during early days, which generates wastes high in PAHs; manufactured gas plant (MGP) historical practices disposed of wastes on the facility or adjacent property. Former employees who worked at the Harrison Gas Plant prior to 1944 allegedly stated that on-site disposal of tar wastes on the ground occurred at the site (PAS-00013565-66). During testimony, a PSE&G chemist testified in deposition that he observed an area in the north corner of the Harrison Plant where solidified tar, clinkers, and debris had been buried and covered with gravel. As early as the 1940s, he noticed that the solidified tar associated with the buried waste would re-liquefy during the summer months and rise to the surface (PAS-00013567). It was also testified in deposition that some gas plant materials, such as coke, were stored on the ground and that other gas plant materials, such as tar, tarry and oily wastes, condensates, light oils, and spent oxide wastes were present in or on the ground due to leaks, spills, and occasional on-site disposal (PAS-00013571). Floating free product layers were observed in 7 piezometers along the river at thicknesses up to 1.79 feet (PAP-00128600) - this indicates that free phase product could have been discharged directly to the river with groundwater. Lead was also a site waste. A list of wastes generated by the PSE&G Harrison Gas Plant facility for the year 1997 included 6.78 tons of lead waste and 8 tons of lead and PCB waste. These waste streams were both transported off-site and landfilled (PAS-00104679-80).</p>	0.00%	PRP member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.873E-2	
						AP_ABS	4.219E-2

Allocation Facility Cmass Calculation

Purdue Pharma Technologies Inc.	199 Main Street	Lodi	NJ	07644
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	15.25	100.00%	-	2.32%	5,837.08	100.00%	-	150.67	1.018817E-2	1.54
Lead	100.00%	44.67	100.00%	-	2.32%	121.01	100.00%	-	47.48	1.018817E-2	0.48
Mercury	100.00%	0.19	100.00%	-	2.32%	-	100.00%	-	0.19	1.018817E-2	0
HPAHs	100.00%	0.22	100.00%	-	2.32%	746.01	100.00%	-	17.53	1.018817E-2	0.18
LPAHs	100.00%	1.65	100.00%	-	2.32%	497.34	100.00%	-	13.19	1.018817E-2	0.13
PCBs	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0

Purdue Pharma Technologies Inc.	199 Main Street	Lodi	NJ	07644
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	1.54	7.310E-7	5.044E-7
Lead	0.01	3,200,000.00	0.48	1.512E-7	1.512E-9
Mercury	0.95	42,000.00	0	4.609E-8	4.378E-8
HPAHs	0.05	240,000.00	0.18	7.440E-7	3.720E-8
LPAHs	0.01	170,000.00	0.13	7.904E-7	7.904E-9
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Purdue Pharma Technologies Inc.	199 Main Street	Lodi	NJ	07644
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	5.440E-4	1.54	1,140.89	5.440E-4	3.754E-4
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	1.645E-4	0.48	525.99	1.645E-4	1.645E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	4.396E-5	0	1.84	4.396E-5	4.176E-5
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	4.033E-6	0.18	0.79	4.033E-6	2.016E-7
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	4.377E-6	0.13	0.61	4.377E-6	4.377E-8
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Purdue Pharma Technologies Inc.	199 Main Street	Lodi	NJ	07644
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	2.32%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	
	# hours/per day discharged	
	#days/week discharged	
	#weeks/yr discharged	
15,672,370	calc gal/yr discharge (FDR)	PAP-00373563, PAP-00373580 & PAP-00373590
365	#day per yr operated (FDR) (PAP-00016712, 16715, PAP-00206119)	
1971	Yr Ops started (FDR)	
1995	Yr Ops ceased (FDR)	
24	calc #yrs facility operated	
Copper (Cu)		
24	#yrs facility discharged	
4.10	calc mg/L COC discharged	Based on Goodrich
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
5,837	calc kg COC discharged	
Lead (Pb)		
24	#yrs facility discharged	Based on Purdue sampling data from 1990
0.085	calc mg/L COC discharged; (FDR) PAP00128020	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
121.01	calc kg COC discharged	
Mercury (Hg)		
24	#yrs facility discharged	
-	calc mg/L COC discharged; (FDR)	Mercury only used a laboratory chemical
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
24	#yrs facility discharged	
8.7	calc mg/L O&G (FDR)	Based on Goodrich
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
1	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
746	calc kg COC discharged	
LPAHs		
24	#yrs facility discharged	
8.7	calc mg/L O&G (FDR)	Based on Goodrich
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
497	calc kg COC discharged	
PCBs		
7	#yrs facility discharged within PCBs Timeline	
	calc mg/kg	
0.0075%	assumed %mg of material in conveyance carried away via 1L discharge flow through the conveyance	
	calc gal/yr discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
2	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
17	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
24	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
25	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
15	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
5	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
5,837	kg Copper	
121	kg Lead	
-	kg Mercury	
746	kg HPAHs	
497	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	
	# days/week discharged	
	# weeks/yr discharged	
-	# gals/yr directly discharged (PAP-00016712, PAP-00206119, PAP-00206137, PAP-00016698)	No direct discharge to Passaic River per FDR. Facility is located on the Saddle River. FDR Page 13, no discharges to Saddle River (PAS-00081939,45). 1996 Preliminary Assessment Report (PAP-00373393), all discharges to PVSC
4.08	ft; 30yr average annual precipitation per Rutgers information	
43,560	acres	
365	ft2 per acre	
1983	#day operated per yr (PAP-00206119, PAP-00433684)	
1994	Yr Ops started	
11	Yr Ops ceased	
	calc #yrs facility operated	
Copper (Cu)		
11	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
11	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
11	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
11	#yrs facility discharged	
0.2	calc mg/L O&G discharged (PAP-00206137)	
10%	% PAHs assumed in O&G	
60%	% COC assumed in PAHs	
0.01	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
11	#yrs facility discharged	
0.2	calc mg/L O&G discharged (PAP-00206137)	
10%	% PAHs assumed in O&G	
40%	% COC assumed in PAHs	
0.01	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
-5	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-10	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
5	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
11	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
12	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
3	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
-7	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

DISCHARGE CALCULATIONS	DIRECT DISCHARGE INFORMATION	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University
	1.73 ACRES - TOTAL SITE AREA (acres)	FDR page 1; confirmed with Google Earth	
	0.73 ACRES - AFFECTED AREA	The 1966 aerial photograph shows an unpaved area adjacent to the south side of the current facility parking lot, which was later paved and fenced-in for materials storage use. (PAS-00085007)	
	4,046.86 METERS ² /ACRE		
	2,954 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	0 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED	
	1971 Year site operations began	Operator: 1971 to 1995; Owner: Not Applicable(FDR page 1)	
	1995 Year site operations ceased	On April 21, 1995 an industrial accident at the facility resulted in a fire and explosion, destroying a portion of the facility and causing the plant operations to be terminated. (PAS-00084999)	
	24 NUMBER YEARS DISCHARGE		
	7 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	2,250 KG/M ³ SOIL DENSITY	Soil reported as mix of clays, silts, sand and gravels (PAP-00127504). Bulk density range 2002 KG/M ³ to 2499 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	
	15,953 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	24 YEARS DISCHARGED 956 MG/KG (MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	Sample TP-7 (PAP-00127745), which is on Purdue property.	
	15 KILOGRAMS DISCHARGED		
Lead (Pb)	24 YEARS DISCHARGED 2,800 MG/KG MAX CONCENTRATION)	Lead was detected in soil with maximum concentrations being detected along the industrial sewer line. Max concentration from sample at a depth of 9 feet (PAP-00127745).	
	0.000001 kg per mg (Merck Index)		
	45 KILOGRAMS DISCHARGED		
Mercury (Hg)	24 YEARS DISCHARGED 11.7 MG/KG (MAX CONCENTRATION)	Mercury was detected in soil with maximum concentrations being detected along the industrial sewer line. Max concentration from a sample at a depth of 9.5 feet (PAP-00127745).	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	24 YEARS DISCHARGED 14.1 MG/KG (TOTAL PAH MAX CONCENTRATION) 0.000001 kg per mg (Merck Index)	Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample.	
	0 KILOGRAMS DISCHARGED		
PAHs (others detected)	24 YEARS DISCHARGED 103.6 MG/KG (TOTAL PAH MAX CONCENTRATION)	Data below Benzo(a)pyrene Equivalent Table	
	0.000001 kg per mg (Merck Index)	NAPP TP-7B PAH sample results collected from Napp areas. (PAP-00127744)	
	2 KILOGRAMS DISCHARGED		
PCBs	24 YEARS DISCHARGED 0.0 MG/KG (MAX OF REPORTED CONCENTRATIONS)	PCBs along shoreline and industrial waste line attributed to Hexcel (see FDR). Set to zero.	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
DDx	0 YEARS DISCHARGED within DDx Timeline MG/KG (MAX CONCENTRATION)	NONE REPORTED	
	0.000001 kg per mg (Merck Index)		
	0.000000 KILOGRAMS DISCHARGED		

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	11.000	1.0	11.0000
Benzo(a)anthracene	18.000	0.1	1.8000
Benzo(b)fluoranthene	12.000	0.1	1.2000
Benzo(k)fluoranthene	5.300	0.01	0.0530
Chrysene	13.000	0.001	0.0130
Dibenz(a,h)anthracene	0.000	1.0	0.0000
Indeno(1,2,3-cd)pyrene	0.000	0.1	0.0000
DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg			
Total Benzo(a)pyrene Equivalents =			14.1

NAPP TP-7B PAH (PAP-00127744)	
Anthracene	3.6
Acenaphthene	0
Acenaphthylene	0
Fluorene	0
Naphthalene	81
Phenanthrene	19
SUM	103.6

Dieldrin	0 YEARS DISCHARGED within Dieldrin Timeline	NONE REPORTED
	MG/KG (MAX CONCENTRATION)	
	0.000001 kg per mg (Merck Index)	
	0.00 KILOGRAMS DISCHARGED	
Dioxins/Furans	0 YEARS DISCHARGED	
	MG/KG (MAX CONCENTRATION)	
	0.000001 kg per mg (Merck Index)	
	0.0000 KILOGRAMS DISCHARGED	
SUMMARY FTMASS ESTIMATES:		
	15.25 kg Copper	
	44.67 kg Lead	
	0.19 kg Mercury	
	0.22 kg PAHs (Benzo(a)pyrene)	
	1.65 kg PAHs (Other)	
	0.00 kg PCBs	
	0.00 kg DDx	
	0.00 kg Dieldrin	
	0.00 kg Dioxins/Furans	
61.98 MASS (KG) DISCHARGED FROM SURFACE SOIL		

Purdue Pharma Technologies Inc.

199 Main Street	Lodi	NJ	07644
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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facillty Adjusted BS
5.948E-7	5.0%	Occasional Noncompliance	An explosion and fire at the site on April 21, 1995, resulted in firefighting material runoff that was “very evident” in the Saddle River for its entire two-mile length to its confluence with the Passaic River (PAS-00007951). No evidence that COC involved in discharge.	-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	5.056E-7

AP_ABS	5.056E-7
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Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Purdue Pharma Technologies Inc.

199 Main Street		Lodi	NJ	07644			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS
4.190E-4	5.0%	Occasional Noncompliance	An explosion and fire at the site on April 21, 1995, resulted in firefighting material runoff that was “very evident” in the Saddle River for its entire two-mile length to its confluence with the Passaic River (PAS-00007951). No evidence that COC involved in discharge.		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	3.562E-4

Allocation Facility Cmass Calculation

Quality Carriers, Inc./Quala Systems	80 Doremus Avenue	Newark	NJ	07105
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.00%	291.32	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	0.00%	49.68	100.00%	-	0	1.018817E-2	0
Mercury	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	4.3	100.00%	-	0.00%	722.88	100.00%	-	4.3	1.018817E-2	0.04
LPAHs	100.00%	5.08	100.00%	-	0.00%	481.92	100.00%	-	5.08	1.018817E-2	0.05
PCBs	100.00%	0.39	100.00%	-	0.00%	-	100.00%	-	0.39	1.018817E-2	0
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Quality Carriers, Inc./Quala Systems	80 Doremus Avenue	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0	0	0
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0.04	1.825E-7	9.127E-9
LPAHs	0.01	170,000.00	0.05	3.044E-7	3.044E-9
PCBs	12.87	26,000.00	0	1.528E-7	1.967E-6
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Quality Carriers, Inc./Quala Systems	80 Doremus Avenue	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	0	0	0	0	0
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	9.893E-7	0.04	0.19	9.893E-7	4.947E-8
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.686E-6	0.05	0.23	1.686E-6	1.686E-8
PCBs	12.87	26,000.00	20,066.54	25,795.56	1.944E-5	0	0.5	1.944E-5	2.501E-4
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Quality Carriers, Inc./Quala Systems	80 Doremus Avenue	Newark	NJ	07105
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	Sanitary sewer discharge goes direct to PVSC with no Bypasses
	# hours/per day discharged	Volumes from permit applications (1992, 1997, 2002)
	#days/week discharged	260 days per year prior to 1997, after 1997 312 days per year
	#weeks/yr discharged	
3,225,100	calc gal/yr discharge PAP00328855, 78	
1970	Yr Ops started	
2007	Yr Ops ceased	
37	calc #yrs facility operated	
Copper (Cu)		
37	#yrs facility discharged	
0.645	calc mg/L COC discharged PAP00329025, PAP00328878	PAP-00328564; PAP-00328975; PAP-00329147
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
291.32	calc kg COC discharged	
Lead (Pb)		
37	#yrs facility discharged	
0.11	calc mg/L COC discharged PAP00329025, PAP00328878	PAP-00328564; PAP-00328975; PAP-00329147
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
49.68	calc kg COC discharged	
Mercury (Hg)		
37	#yrs facility discharged	
-	calc mg/L COC discharged PAP00329025, PAP00328878	PAP-00328564; PAP-00328975; PAP-00329147
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
37	#yrs facility discharged	2002 sampling for TOC = 1067 mg/l
1,067.00	calc mg/L O&G	
2.5%	% TOC that is considered O&G	
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
2	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
722.88	calc kg COC discharged	
LPAHs		
37	#yrs facility discharged	2002 sampling for TOC = 1067 mg/l
1,067.00	calc mg/L O&G	
2.5%	% TOC that is considered O&G	
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
1	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
481.92	calc kg COC discharged	
PCBs		
8	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
3	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
18	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
37	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
38	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
16	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
6	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
291.32	kg Copper	
49.68	kg Lead	
-	kg Mercury	
722.88	kg HPAHs	
481.92	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information		COMMENTS/NOTES
	# hours/day discharged		stormwater discharged to passaic via open ended pipe
	# days/week discharged		
	# weeks/yr discharged		Stormwater only, PAP-00329250, FDR pages 17-18
	# gals/yr directly discharged		Included in OFT Calculations
	4.08	ft; 30yr average annual precipitation per Rutgers information	
		acres	
	43,560	ft2 per acre	
	7.00	acres	
	50%	Percent Precip to River	
	1970	Yr Ops started	
	2007	Yr Ops ceased	
	37	calc #yrs facility operated	
Copper (Cu)			
	37	#yrs facility discharged	
	0.50	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Lead (Pb)			
	37	#yrs facility discharged	
	0.1125	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Mercury (Hg)			
	37	#yrs facility discharged	
	0.00	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
HPAHs			
	37	#yrs facility discharged	
	266.75	calc mg/L O&G	
	2.5%	% TOC that is considered O&G	
	10%	% O&G that is considered PAHs	
	60%	% PAHs considered as HPAHs	
	0.40	calc mg/L HPAHs	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
LPAHs			
	37	#yrs facility discharged	
	266.75	calc mg/L O&G	
	2.5%	% TOC that is considered O&G	
	10%	% O&G that is considered PAHs	
	40%	% PAHs considered as LPAHs	
	0.27	calc mg/L LPAHs	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
PCBs			
	8	#yrs facility discharged within PCBs Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
DDx			
	3	#yrs facility discharged within DDx Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dieldrin			
	18	#yrs facility discharged within Dieldrin Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxins/Furans			
	37	#yrs facility discharged	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D			
	38	#yrs facility discharged within 2,4-D Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T			
	16	#yrs facility discharged within 2,4,5-T Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP			
	6	#yrs facility discharged within 2,4,6-TCP Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:			
	-	kg Copper	
	-	kg Lead	
	-	kg Mercury	
	-	kg HPAHs	
	-	kg LPAHs	
	-	kg PCBs	
	-	kg DDx	
	-	kg Dieldrin	
	-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	7 ACRES - TOTAL SITE AREA (acres) 3.5 ACRES - AFFECTED AREA	Much of the southern half of the site is capped with concrete, asphalt, and building structures. The northern half of the site is predominantly lightly vegetated and unvegetated soils with several scattered buildings. (PAS-00084612)	
	4,046.86 METERS ² /ACRE		
	14,164 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	1 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED	
	1970 Year site operations began	QCI operated the transportation terminal from 1970 to 2007 and a tank wash from 1970 until 1992; Quala Systems, Inc. (QSI) operated the tank wash from 1993 to 2007 (FDR page 1; PAP-00145606)	
	2007 Year site operated tank wash		
	37 NUMBER YEARS DISCHARGE		
	52 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,965 KG/M ³ SOIL DENSITY	Fill material consisting primarily of silts and fine grained sands (PAS-00084612). Bulk density range 1450 KG/M ³ to 2480 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	
	102,979 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	37 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	Fill 3 - south of Fill 2, 2-4 feet bgs (FDR, PAGE 13, 3rd table), detected maximum 520 mg/kg. Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		
Lead (Pb)	37 YEARS DISCHARGED 0 MG/KG (MAX CONCENTRATION)	AOC 11 - stained soil near red storage area, Figure 6, Pb - 2,060 mg/kg at 0.5 - 1 inch (PAP-00328705). Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		
Mercury (Hg)	1.416401 YEARS DISCHARGED 0.0 MG/KG (MAX CONCENTRATION)	AOC 11 (Stained Soil near Red Storage Area) POSTEX2 (PAP-00328725). Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	37 YEARS DISCHARGED 41.8 MG/KG (TOTAL PAH AVERAGE CONCENTRATION)	Total concentration of PAH compounds for Benzo(a)pyrene Equivalent https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample.	
	0.000001 kg per mg (Merck Index) 4 KILOGRAMS DISCHARGED	Other PAHs (PAS-00084557) Table 9 - Sample ID STAIN 6B-SS01 Phenanthrene - 35.5 ppm Anthracene - 6.95 ppm Acenaphthene - 2.92 ppm Acenaphthylene - 0.676 ppm Naphthalene - 0.804 ppm Fluorene - 2.5 ppm	
PAHs (others detected)	37 YEARS DISCHARGED 49 MG/KG (TOTAL PAH MAX CONCENTRATION)		
	0.000001 kg per mg (Merck Index) 5 KILOGRAMS DISCHARGED	Staining near Trailer Staging Area 0 - 0.5 inches bgs FDR pg 11 table, Pyrene 57.4 mg/kg (PAS-00084545-61). This area lies in the northern 50% of the property. Environ 2004, Figure 7 (PAP-00328706).	

PAS-00084557, Table 9, Sample ID STAIN 6B-SS01

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	25.400	1.0	25.4000
Benzo(a)anthracene	29.700	0.1	2.9700
Benzo(b)fluoranthene	27.600	0.1	2.7600
Benzo(k)fluoranthene	11.100	0.01	0.1110
Chrysene	30.500	0.001	0.0305
Dibenz(a,h)anthracene	8.720	1.0	8.7200
Indeno(1,2,3-cd)pyrene	17.600	0.1	1.7600

DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg

Total Benzo(a)pyrene Equivalents =

41.8

PCBs	37 YEARS DISCHARGED	Table 11 boring E11B, 1.0-1.5 bgs, Arclor -1260 (PAP-00328694 pdf pg 56)
	3.74 MG/KG (MAX OF REPORTED CONCENTRATIONS)	
	0.000001 kg per mg (Merck Index)	
	0 KILOGRAMS DISCHARGED	
DDx	0 YEARS DISCHARGED within DDx Timeline	
	MG/KG (MAX CONCENTRATION)	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	0 KILOGRAMS DISCHARGED	
Dieldrin	0 YEARS DISCHARGED within Dieldrin Timeline	
	MG/KG (MAX CONCENTRATION)	
	3.785 L per gallon (Merck Index)	
	0.000001 kg per mg (Merck Index)	
	0 KILOGRAMS DISCHARGED	
Dioxins/Furans	NONE FOUND IN AVAILABLE DOCUMENTATION	
	0 YEARS DISCHARGED	
	MG/KG (MAX CONCENTRATION)	
	0.000001 kg per mg (Merck Index)	
	0 calc kg COC discharged	
SUMMARY CMASS ESTIMATES:		
	0.00 kg Copper	
	0.00 kg Lead	
	0.00 kg Mercury	
	4.30 kg PAHs (Benzo(a)pyrene Equivalent)	
	5.08 kg PAHs (Other)	
	0.39 kg PCBs	
	0.00 kg DDx	
	0.00 kg Dieldrin	
	0.00 kg Dioxins/Furans	
9.77 MASS (KG) DISCHARGED FROM SURFACE SOIL		

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation

Quality Carriers, Inc./Quala Systems

80 Doremus Avenue		Newark	NJ	07105				
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS	
1.979E-6	5.0%	Occasional Noncompliance	According to the 1998 BCM ISRA PSA, the following summary of PVSC rule violations occurred: Between April 26, 1989 and August 6, 1997 - Multiple violations of discharging corrosive waste July 31, 1990 - pH monitoring equipment was not operating in conformance with its intended use. (No COC involvement) Between January 30, 1991 and May 8, 1995 - Multiple violations of Petroleum Hydrocarbons results exceeding limits. There were numerous areas with staining. The drum storage pad located next to the oil skimmer was filled with approximately three inches of oily liquid waste. The integrity of the pad could not be determined (PAS-00084669).		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	1.682E-6	
							AP_ABS	1.682E-6

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation

Quality Carriers, Inc./Quala Systems

80 Doremus Avenue		Newark	NJ	07105			
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS
2.502E-4	5.0%	Occasional Noncompliance	According to the 1998 BCM ISRA PSA, the following summary of PVSC rule violations occurred: Between April 26, 1989 and August 6, 1997 - Multiple violations of discharging corrosive waste July 31, 1990 - pH monitoring equipment was not operating in conformance with its intended use. (No COC involvement) Between January 30, 1991 and May 8, 1995 - Multiple violations of Petroleum Hydrocarbons results exceeding limits. There were numerous areas with staining. The drum storage pad located next to the oil skimmer was filled with approximately three inches of oily liquid waste. The integrity of the pad could not be determined (PAS-00084669).		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	2.127E-4

Allocator's Determinations Regarding Legal Defenses Raised by Allocation Parties

QUALITY CARRIERS

QCI and QSI state that they received a release from Occidental in the Tierra/Maxus bankruptcy and Occidental is not entitled to recover at least \$165 million dollars in response costs from QCI or QSI. Any responsibility for such responses costs must be deducted from any share of the OU-2 response costs attributable to QCI or QSI.

ALLOCATOR'S DETERMINATION – Though I have not had the opportunity to review the underlying settlement document and other potentially relevant facts associated with the release provided by OCC, assuming its validity, it is apparent that there is a high likelihood of success in any action against OCC to enforce the release. Given OCC's lack of participation in the allocations process, however, the Allocator does not believe that it is appropriate to account for the amount of any such release in the assignment of allocated shares. Rather, the Allocator notes the existence of the release and recommends that it be taken into account in determining the appropriate amount of any future settlement with EPA.

Allocation Facility Cmass Calculation

Revere Smelting & Refining Corp.	387 Avenue P	Newark	NJ	07105
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	79.44	100.00%	-	0.00%	-	100.00%	444.8	524.24	1.018817E-2	5.34
Lead	100.00%	-	100.00%	-	0.00%	-	100.00%	92.5	92.5	1.018817E-2	0.94
Mercury	100.00%	0.16	100.00%	-	0.00%	-	100.00%	-	0.16	1.018817E-2	0
HPAHs	100.00%	0.03	100.00%	-	0.00%	-	100.00%	-	0.03	1.018817E-2	0
LPAHs	100.00%	0.08	100.00%	-	0.00%	-	100.00%	-	0.08	1.018817E-2	0
PCBs	100.00%	0.07	100.00%	-	0.00%	-	100.00%	-	0.07	1.018817E-2	0
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Revere Smelting & Refining Corp.	387 Avenue P	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	5.34	2.543E-6	1.755E-6
Lead	0.01	3,200,000.00	0.94	2.945E-7	2.945E-9
Mercury	0.95	42,000.00	0	3.881E-8	3.687E-8
HPAHs	0.05	240,000.00	0	1.274E-9	6.368E-11
LPAHs	0.01	170,000.00	0	4.794E-9	4.794E-11
PCBs	12.87	26,000.00	0	2.743E-8	3.530E-7
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Revere Smelting & Refining Corp.	387 Avenue P	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	1.893E-3	5.34	3,969.61	1.893E-3	1.306E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	3.205E-4	0.94	1,024.78	3.205E-4	3.205E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	3.702E-5	0	1.55	3.702E-5	3.516E-5
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	6.902E-9	0	0	6.902E-9	3.451E-10
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	2.655E-8	0	0	2.655E-8	2.655E-10
PCBs	12.87	26,000.00	20,066.54	25,795.56	3.488E-6	0	0.09	3.488E-6	4.490E-5
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Revere Smelting & Refining Corp.	387 Avenue P	Newark	NJ	07105
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	1971 NJDEP Inspection Report (PAP-00125798-800) states overflow water discharged to the Plum Creek
	# days/week discharged	No connection to the PVSC at this time, so all discharge assumed to Plum Creek (PAP-00126183)
	# weeks/yr discharged	No flow data so assuming rainfall data for flow rates
2,661,291	# gals/yr directly discharged	
4.08	ft; 30yr average annual precipitation per Rutgers information	
43,560	ft ² per acre	
4.00	acres	
50%	Percent Precip to River	
1970	Yr Ops started	
1972	Yr Ops ceased	
2	calc #yrs facility operated	
Copper (Cu)		
2	#yrs facility discharged	Using Plum Creek Surface Water Sampling and Groundwater Data for COCs
15.80	calc mg/L COC discharged PAP0012591-3	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
444.80	calc kg COC discharged	(PAP-00728668)
Lead (Pb)		
2	#yrs facility discharged	Using Plum Creek Surface Water Sampling and Groundwater Data for COCs
149.99	calc mg/L COC discharged PAP0012591-3	Also 0.59 mg/l per 1971 wastewater analysis Tierra-A-018437
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
92.50	calc kg COC discharged	Final Revere Expert Witness Report
Mercury (Hg)		
2	#yrs facility discharged	Using Plum Creek Surface Water Sampling and Groundwater Data for COCs
0.00049	calc mg/L COC discharged PAP0012591-3	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	(PAP-00728668)
HPAHs		
2	#yrs facility discharged	Using Plum Creek Surface Water Sampling and Groundwater Data for COCs
0.0047	calc mg/L COC discharged PAP0012591-3	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	(PAP-00728668)
LPAHs		
2	#yrs facility discharged	Using Plum Creek Surface Water Sampling and Groundwater Data for COCs
0.0055	calc mg/L COC discharged PAP0012591-3	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	(PAP-00728668)
PCBs		
3	#yrs facility discharged within PCBs Timeline	Using Plum Creek Surface Water Sampling and Groundwater Data for COCs
0.008	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	(PAP-00728668)
DDx		
3	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
3	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
2	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
3	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
3	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
3	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
444.80	kg Copper	
92.50	kg Lead	
-	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	

-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University.
	4 ACRES - TOTAL SITE AREA (acres)	(PAP-00728472)	
	3 ACRES - AFFECTED AREA	Estimate of site area with exposed fill determined from review of historical aerial photographs 1995-2020 (Google Earth) and Figure 1 Allocation Facilities map. Approximately 25% paved 1954-1970 . All operations took place on paved ground or inside buildings. (PAP-00728475)	
	4,046.86 METERS ² /ACRE		
	12,141 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	1 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED	
	1957 Year site operations began	Operator: ~1964-December 1972 (PAS-00008100; PAS-00013085; PAS-0051943) Owner: ~1957- 1970 (PAS-00013085; PAS-00051950; PAP-00125848)	Historical records suggest that smelting operations were conducted at this location as far back as 1941 (PAP-00728475).
	1972 Year site operations ceased	The entire period that Revere owned and/operated at the site is used for the purpose of this calculation.	
	15 NUMBER YEARS DISCHARGE		
	18 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,965 KG/M ³ SOIL DENSITY	Fill reported as silty sand with trace of gravel (FDR). Bulk density range 1450 KG/M ³ to 2480 KG/M ³ , so use average. (http://structx.com/Soil_Properties_002.html)	
	35,784 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	15 YEARS DISCHARGED 2,220 MG/KG (MAX CONCENTRATION)	Sample SB-05A, at Avenue P Landfill near site (FDR page 9; PAP-00125908) There is evidence that Revere used the Avenue P landfill for illegal dumping (FDR p 4-5, 7-8, 10). Therefore, Avenue P samples used for this calculation.	
	0.000001 kg per mg (Merck Index) 79 KILOGRAMS DISCHARGED		
Lead (Pb)	15 YEARS DISCHARGED 0 MG/KG (AVERAGE CONCENTRATION)	Sample SB-05A, at Avenue P Landfill near site (FDR page 9; PAP-00125908). Set to 0 since less than HF.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		
Mercury (Hg)	15 YEARS DISCHARGED 4.5 MG/KG (MAX CONCENTRATION)	Sample SB-05A, at Avenue P Landfill near site (FDR page 9; PAP-00125908) There is evidence that Revere used the Avenue P landfill for illegal dumping (FDR p 4-5, 7-8, 10). Therefore, Avenue P samples used for this calculation.	
	0.000001 kg per mg (Merck Index) 0 KILOGRAMS DISCHARGED		

PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	
	15 YEARS DISCHARGED
	0.9 MG/KG (TOTAL PAH MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	0 KILOGRAMS DISCHARGED
PAHs (others detected)	
	15 YEARS DISCHARGED
	2.20 MG/KG (TOTAL PAH MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	0 KILOGRAMS DISCHARGED
PCBs	
	15 YEARS DISCHARGED
	1.91 MG/KG (MAX OF REPORTED CONCENTRATIONS)
	0.000001 kg per mg (Merck Index)
	0.07 KILOGRAMS DISCHARGED
DDx	
	0 YEARS DISCHARGED within DDx Timeline
	MG/KG (MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	0 KILOGRAMS DISCHARGED
Dieldrin	
	0 YEARS DISCHARGED within Dieldrin Timeline
	MG/KG (MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	0 KILOGRAMS DISCHARGED
Dioxins/Furans	
	0 YEARS DISCHARGED
	MG/KG (MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	0 KILOGRAMS DISCHARGED
SUMMARY CMASS ESTIMATES:	
	79.44 kg Copper
	0.00 kg Lead
	0.16 kg Mercury
	0.03 kg PAHs (Benzo(a)pyrene Equivalent)
	0.08 kg PAHs (Other)
	0.07 kg PCBs
	0.00 kg DDx
	0.00 kg Dieldrin
	0.00 kg Dioxins/Furans
79.78 MASS (KG) DISCHARGED FROM SURFACE SOIL	

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample>.

Sample SB-05A, at Avenue P Landfill near site (PAP-00125905).
There is evidence that Revere used the Avenue P landfill for illegal dumping (FDR p 4-5, 7-8, 10). Therefore, Avenue P samples used for this calculation.

Data below the Benzo(a)pyrene Equivalent Table

Sample SB-05A, at Avenue P Landfill near site (PAP-00125905).
There is evidence that Revere used the Avenue P landfill for illegal dumping (FDR p 4-5, 7-8, 10). Therefore, Avenue P samples used for this calculation.

Sample SB-05A, at Avenue P Landfill near site (FDR page 9; PAP-00125907)
There is evidence that Revere used the Avenue P landfill for illegal dumping (FDR p 4-5, 7-8, 10). Therefore, Avenue P samples used for this calculation.

NONE FOUND IN AVAILABLE DOCUMENTATION

NONE FOUND IN AVAILABLE DOCUMENTATION

NONE FOUND IN AVAILABLE DOCUMENTATION

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)pyrene	0.544	1.0	0.5440
Benzo(a)anthracene	0.660	0.1	0.0660
Benzo(b)fluoranthene	0.738	0.1	0.0738
Benzo(k)fluoranthene	0.320	0.01	0.0032
Chrysene	0.688	0.001	0.0007
Dibenz(a,h)anthracene	0.152	1.0	0.1520
Indeno(1,2,3-cd)pyrene	0.341	0.1	0.0341
DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg			
Total Benzo(a)pyrene Equivalents =			0.9

SB-05A, at Avenue P Landfill (PAP-00125905).	
Anthracene	0.185
Acenaphthene	0.124
Acenaphthylene	0.103
Fluorene	0.211
Naphthalene	0.75
Phenanthrene	0.83
SUM	2.203

Revere Smelting & Refining Corp.

ARR2713

For Public Disclosure by Consent of the Participating Allocation Parties and EPA (Fall 2022)
Case 2:22-cv-07326-MCA-LDW Document 289-16 Filed 01/31/24 Page 53 of 98 PageID: 7545

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation									
Revere Smelting & Refining Corp.									
387 Avenue P			Newark	NJ	07105				
Facility BS	CUF	CUF_Category		CUF_NOTES		COF	COF_NOTES		Facility Adjusted BS
1.389E-3	0.0%	Historically Compliant or	No Evidence	The RIR states that the Avenue P landfill, located just north of Revere Smelting, was used from the 1920s until the 1970s, and it was believed that the surrounding industrial companies and manufacturing plants used the landfill and adjacent areas beyond the property border of the landfill site as an illegal dump to dispose of hazardous materials, manufacturing by-products, solid waste/junk and process wastes (PAP-00125850). A 2008 RIR stated the Avenue P Landfill Site included land upon which the Revere-DE operated from April 1970 to December 31, 1972 as well as additional adjacent properties for a total of eight acres. The Avenue P site was created by filling in salt marshes in the early 1900s (PAP-00125850). In addition, the RIR noted that the highest concentrations of metals were detected in samples collected at the base of the landfill, indicating that the ash and glass layer present at the landfill/marsh interface is a likely source. This debris was likely deposited on site at a time when the area was predominantly marshland (PAP-00125886). Low probability that Revere is source of such contamination.		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities		1.111E-3
									AP_ABS
									1.111E-3

Allocator's Determinations Regarding Legal Defenses Raised by Allocation Parties

REVERE SMELTING

Revere argues that Revere-DE is liable only for the period of its actual ownership/operation of its OU2 related facility. Revere-DE did not indemnify the prior owner and operator of the facility and the seller warranted to Revere-DE that there were “no suits, actions, claims, investigations or inquiries by any governmental body ... affecting any of the Corporations or ... assets ... or the ability to conduct business in the future.” Rather the Seller “indemnifies and holds harmless the Buyer.” As noted above, Revere-DE cannot be liable for the disposal of chemicals as part of the Avenue P Landfill after Revere-DE ceased operating because Revere-DE: (a) did not own the Avenue P landfill property; (b) Revere-DE did not operate the landfill; (c) did not arrange for the disposal; and (d) did not transport or arrange for transport of chemicals to the Avenue P Landfill. Therefore, Revere-DE is not liable for the COCs in the historic fill and the landfill contaminated soil.

ALLOCATOR'S DETERMINATION - Though Revere Smelting may have a sustainable argument regarding its allegation that it did not accept the CERCLA liability upon purchase of the facility site, there is an insufficient demonstration of applicable case law and facts to support this claim based on available data. Therefore, the Allocator leaves this matter as a topic for settlement discussions between Revere Smelting and EPA.

Secondly, though I have not had the opportunity to review the underlying settlement document and other potentially relevant facts associated with the release provided by OCC to Revere Smelting, assuming its validity, it is apparent that there is a high likelihood of success in any action against OCC to enforce the release. Given OCC's lack of participation in the allocations process, however, the Allocator does not believe that it is appropriate to account for the amount of any such release in the assignment of allocated shares. Rather, the Allocator notes the existence of the release and recommends that it be taken into account in determining the appropriate amount of any future settlement with EPA.

Allocation Facility Cmass Calculation

Roman Asphalt Corporation	14 Ogden Street	Newark	NJ	07104
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0
Lead	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0
Mercury	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	11.71%	-	100.00%	95.2	95.19	1.018817E-2	0.97
LPAHs	100.00%	-	100.00%	-	11.71%	-	100.00%	63.5	63.46	1.018817E-2	0.65
PCBs	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	11.71%	-	100.00%	-	0	1.018817E-2	0

Roman Asphalt Corporation

14 Ogden Street

Newark

NJ

07104

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	0	0	0
Lead	0.01	3,200,000.00	0	0	0
Mercury	0.95	42,000.00	0	0	0
HPAHs	0.05	240,000.00	0.97	4.041E-6	2.020E-7
LPAHs	0.01	170,000.00	0.65	3.803E-6	3.803E-8
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Roman Asphalt Corporation	14 Ogden Street	Newark	NJ	07104
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	0	0	0	0	0
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	0	0	0	0	0
Mercury	0.95	42,000.00	4,322.53	41,955.96	0	0	0	0	0
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	2.190E-5	0.97	4.29	2.190E-5	1.095E-6
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	2.106E-5	0.65	2.93	2.106E-5	2.106E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Roman Asphalt Corporation	14 Ogden Street	Newark	NJ	07104
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Fourth Avenue	CSO	0.20%	30.89%	
2	Fourth Avenue	Bypass	11.65%	100.00%	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information on discharges or permits, etc.
	# days/week discharged	Facility was for Heavy Highway/Street Construction Contractor
	# weeks/yr discharged	Assume equipment storage and maintenance
665,323	# gals/yr directly discharged	1 acre
		Research on Asphalt Plant Discharges used for COCs
4.08	ft; 30yr average annual precipitation per Rutgers information	Storm Sewer connected to the Passaic River
43,560	ft2 per acre	
1.00	acres	
50%	Percent Precip to River	
1964	Yr Ops started	
2006	Yr Ops ceased	
42	calc #yrs facility operated	
Copper (Cu)		
42	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Lead (Pb)		
42	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Mercury (Hg)		
42	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
HPAHs		
42	#yrs facility discharged	
15.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
0.90	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
95.19	calc kg COC discharged	
LPAHs		
42	#yrs facility discharged	
15.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0.60	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
63.46	calc kg COC discharged	
PCBs		
14	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
9	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
24	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
42	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
43	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
22	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
12	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
-	kg Copper	
-	kg Lead	
-	kg Mercury	
95.19	kg HPAHs	
63.46	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Roman Asphalt Corporation

14 Ogden Street

Newark

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Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facillty Adjusted BS
2.401E-7	10.0%	Periodic Noncompliacne	A NOV was issued to Roman Asphalt on September 18, 1986, due to “hazardous substance discharge” which included reported “pooling oil in facility yard and running off to Rt. 21 drainage system and bank” (PAS-00111340). Another NOV was issued to Roman Asphalt on October 6, 1986, due to “discharge of hazardous substance.” The NOV reported that “oil has run off property onto embankment of State Hwy 21 South”. This pooling oil was apparently used motor oil from oil changes in heavy equipment (PAS-00111343).	20.0%	20% Failed to participate in conduct of allocation as offered by EPA	3.121E-7

AP_ABS	3.121E-7
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Roman Asphalt Corporation

14 Ogden Street

Newark

NJ

07104

Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facillty Adjusted BS
1.306E-6	10.0%	Periodic Noncompliacne	A NOV was issued to Roman Asphalt on September 18, 1986, due to “hazardous substance discharge” which included reported “pooling oil in facility yard and running off to Rt. 21 drainage system and bank” (PAS-00111340). Another NOV was issued to Roman Asphalt on October 6, 1986, due to “discharge of hazardous substance.” The NOV reported that “oil has run off property onto embankment of State Hwy 21 South”. This pooling oil was apparently used motor oil from oil changes in heavy equipment (PAS-00111343).	20.0%	20% Failed to participate in conduct of allocation as offered by EPA	1.697E-6

AP_ABS	1.697E-6
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Allocation Facility Cmass Calculation

Royce Associates	17 Carlton Avenue	East Rutherford	NJ	07073
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	2.32%	234.71	100.00%	208.1	213.59	1.018817E-2	2.18
Lead	100.00%	22.73	100.00%	-	2.32%	39.12	100.00%	34.7	58.33	1.018817E-2	0.59
Mercury	100.00%	-	100.00%	-	2.32%	1.30	100.00%	1.3	1.33	1.018817E-2	0.01
HPAHs	100.00%	-	100.00%	-	2.32%	6,258.88	100.00%	5,550.3	5,695.72	1.018817E-2	58.03
LPAHs	100.00%	-	100.00%	-	2.32%	4,172.58	100.00%	3,700.2	3,797.15	1.018817E-2	38.69
PCBs	100.00%	4.16	100.00%	-	2.32%	-	100.00%	-	4.16	1.018817E-2	0.04
DDx	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	2.32%	-	100.00%	-	0	1.018817E-2	0

Allocation Facility COC Base Scores - Protocol Calculation

Royce Associates	17 Carlton Avenue	East Rutherford	NJ	07073
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	2.18	1.036E-6	7.150E-7
Lead	0.01	3,200,000.00	0.59	1.857E-7	1.857E-9
Mercury	0.95	42,000.00	0.01	3.236E-7	3.075E-7
HPAHs	0.05	240,000.00	58.03	2.418E-4	1.209E-5
LPAHs	0.01	170,000.00	38.69	2.276E-4	2.276E-6
PCBs	12.87	26,000.00	0.04	1.630E-6	2.098E-5
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Royce Associates	17 Carlton Avenue	East Rutherford	NJ	07073

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	7.712E-4	2.18	1,617.33	7.712E-4	5.321E-4
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	2.021E-4	0.59	646.2	2.021E-4	2.021E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	3.087E-4	0.01	12.95	3.087E-4	2.932E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	1.310E-3	58.03	256.48	1.310E-3	6.552E-5
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	1.260E-3	38.69	175.57	1.260E-3	1.260E-5
PCBs	12.87	26,000.00	20,066.54	25,795.56	2.073E-4	0.04	5.35	2.073E-4	2.668E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Royce Associates	17 Carlton Avenue	East Rutherford	NJ	07073
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Yantacaw	Bypass	2.32%	100.00%	

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	Very Limited to No data regarding PVSC discharges, only a note that indicates that wastewater was
	# hours/per day discharged	discharged to the PVSC - no monitoring or flow data.
	#days/week discharged	Manufacturer of ingredients for textile and rubber production.
	#weeks/yr discharged	Using Berol Corporation as an example for discharges to PVSC
13,000,000	calc gal/yr discharge	
1929	Yr Ops started	
1982	Yr Ops ceased	
53	calc #yrs facility operated	
Copper (Cu)		
53	#yrs facility discharged	Based on Berol Corporation
0.09	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
234.71	calc kg COC discharged	
Lead (Pb)		
53	#yrs facility discharged	Based on Berol Corporation
0.015	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
39.12	calc kg COC discharged	
Mercury (Hg)		
53	#yrs facility discharged	Based on Berol Corporation
0.0005	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1.30	calc kg COC discharged	
HPAHs		
53	#yrs facility discharged	Based on Berol Corporation
40.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
2.40	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
6,258.88	calc kg COC discharged	
LPAHs		
53	#yrs facility discharged	Based on Berol Corporation
40.00	calc mg/L O&G	
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
1.60	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
4,172.58	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
33	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
53	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
37	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
38	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
234.71	kg Copper	
39.12	kg Lead	
1.30	kg Mercury	
6,258.88	kg HPAHs	
4,172.58	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	NPDES Permit #0002682 indicates discharge to a tributary of Passaic River (no name provided)
5	# days/week discharged	Indicated 100,000 gpd, assuming 5 days per week operation (260 days)
52	# weeks/yr discharged	
26,000,000	# gals/yr directly discharged	
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft2 per acre	
1929	Yr Ops started	
1982	Yr Ops ceased	
53	calc #yrs facility operated	
Copper (Cu)		
53	#yrs facility discharged	no information on discharges...stated as non-contact cooling water. Using Berol Corp discharge
0.045	calc mg/L COC discharged	information at 50%.
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
235	calc kg COC discharged	
Lead (Pb)		
53	#yrs facility discharged	no information on discharges...stated as non-contact cooling water. Using Berol Corp discharge
0.0075	calc mg/L COC discharged	information at 50%.
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
39	calc kg COC discharged	
Mercury (Hg)		
53	#yrs facility discharged	no information on discharges...stated as non-contact cooling water. Using Berol Corp discharge
0.00025	calc mg/L COC discharged	information at 50%.
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1.30	calc kg COC discharged	
HPAHs		
53	#yrs facility discharged	no information on discharges...stated as non-contact cooling water. Using Berol Corp discharge
20.00	calc mg/L O&G	information at 50%.
10%	% O&G that is considered PAHs	
60%	% PAHs considered as HPAHs	
1.20	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
6,258.88	calc kg COC discharged	
LPAHs		
53	#yrs facility discharged	no information on discharges...stated as non-contact cooling water. Using Berol Corp discharge
20.00	calc mg/L O&G	information at 50%.
10%	% O&G that is considered PAHs	
40%	% PAHs considered as LPAHs	
0.80	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
4,172.58	calc kg COC discharged	
PCBs		
49	#yrs facility discharged within PCBs Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
33	#yrs facility discharged within Dieldrin Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
53	#yrs facility discharged	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
37	#yrs facility discharged within 2,4-D Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
38	#yrs facility discharged within 2,4,5-T Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
208.14	kg Copper	
34.69	kg Lead	
1.30	kg Mercury	
5,550.32	kg HPAHs	
3,700.22	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.08 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University
	5 ACRES - TOTAL SITE AREA (acres)	Acreage noted in the PA Report (PAS-00008137).	
	2 ACRES - AFFECTED AREA	Rough estimate of the affected area based on a drawn image of the site on the Royce Global website (https://royceglobal.com/about/). The factory is shown, with the pond and the railroad to the left.	
	4,046.86 METERS ² /ACRE		
	8,094 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	1 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO POND THAT LED TO PASSAIC	
	1929 Year site operations began	FDR Page 1.	
	1981 Year site processing and storage operations ceased	A 1987 letter noted that the copany discontinued business during Oct 1981, liquidated, and was dissolved (FDR Page 2).	
	52 NUMBER YEARS DISCHARGE		
	42 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1,979 KG/M ³ SOIL DENSITY	Soil type not specified in documents provided. Used https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx to get an idea of the soil type out there. Most is "Urban Land" but nearby soil types are loam/silt loam from 0-30 inches. Used structx.com/Soil_Properties_002.html to identify the density, selected silty clay and the average of the min (1602 kg/m3) and max (2355 kg/mg3).	Silt loam has an approximate bulk density of 1.33 g/cm3 (https://cropwatch.unl.edu/documents/USDA_NRCS_bulk_density_guide.pdf)
	83,270 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
PCBs	51 YEARS DISCHARGED 50 MG/KG (MAX CONCENTRATION)	PCBs were excavated from the transformer area in 1982 (PAS-0008153). Number of years reflect a 1930 start date for PCBs. Eight 55 gallon drums of waste collected from a transformer leaking onto soil. Analysis indicated greater than 50 ppm PCBs (PAS-00102210; FDR Page 2).	
	0.000001 kg per mg (Merck Index)		
	4 KILOGRAMS DISCHARGED		
Diesel fuel	1 YEARS DISCHARGED	Spill in 1983 and was still being remediated in 1984 (PAS-00102173). Sampling of the pond in March/August of 1984 revealed high levels of benzene, toluene, ethylbenzene and zinc in pond sediments (PAS-00102187).	
	MG/KG (AVERAGE CONCENTRATION)	No data provided.	
	0.000001 kg per mg (Merck Index)		
	0 KILOGRAMS DISCHARGED		
Lead	52 YEARS DISCHARGED 273.0 MG/KG (AVERAGE CONCENTRATION)	Detected in soil samples in 1984 (PAS-00102183). Highest concentration from RC-3S collected in 1984 (PAS-00102183). Depth and location details were not provided.	
	0.000001 kg per mg (Merck Index)		
	23 KILOGRAMS DISCHARGED		

PAHs (oils)	52 YEARS DISCHARGED
	MG/KG (TOTAL PAH MAX CONCENTRATION)
0.000001	kg per mg (Merck Index)
0	KILOGRAMS DISCHARGED
PAHs (others detected)	
	YEARS DISCHARGED
	MG/KG (TOTAL PAH MAX CONCENTRATION)
0.000001	kg per mg (Merck Index)
0	KILOGRAMS DISCHARGED
DDx	
	0 YEARS DISCHARGED within DDx Timeline
	MG/KG (MAX CONCENTRATION)
3.785	L per gallon (Merck Index)
0.000001	kg per mg (Merck Index)
0	KILOGRAMS DISCHARGED
Dieldrin	
	0 YEARS DISCHARGED within Dieldrin Timeline
	MG/KG (MAX CONCENTRATION)
3.785	L per gallon (Merck Index)
0.000001	kg per mg (Merck Index)
0	KILOGRAMS DISCHARGED
Dioxins/Furans	
	0 YEARS DISCHARGED
	MG/KG (MAX CONCENTRATION)
0.000001	kg per mg (Merck Index)
0	calc kg COC discharged
SUMMARY FTMASS ESTIMATES:	
	0.00 kg Copper
	22.73 kg Lead
	0.00 kg Mercury
	0.00 kg PAHs (Benzo(a)pyrene Equivalent)
	0.00 kg PAHs (Other)
	4.16 kg PCBs
	0.00 kg DDx
	0.00 kg Dieldrin
	0.00 kg Dioxins/Furans
26.90 MASS (KG) DISCHARGED FROM SURFACE SOIL	

Four 55-gallon drums of compressor oil, oily sludge, soil spill identified in 1982 (FDR Page 2). Also, spills of No. 6 heating oil cause soil contamination (FDR Page 2). Oil was still present in February 1984 sampling (PAS-00102226-8).

No data provided.

Other PAHs = Benzo(g,h,i)perylene, Fluorene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Naphthalene, 2-Methylnaphthalene.
No data provided.

NOT DETECTED (FDR)

NOT DETECTED (FDR)

NOT DETECTED (FDR)

Royce Associates

East Rutherford

07073

AP_ABS

4.728E-5

Royce Associates

East Rutherford

07073

AP_ABS	4.646E-3
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ARR2732

Allocation Facility Cmass Calculation

Safety Kleen Envirosystems Co./McKesson Corp.	600 Doremus Ave	Newark	NJ	07105
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	368.59	100.00%	-	0.00%	-	100.00%	28.2	396.76	1.018817E-2	4.04
Lead	100.00%	1,316.38	100.00%	-	0.00%	-	100.00%	-	1,316.38	1.018817E-2	13.41
Mercury	100.00%	1.01	100.00%	-	0.00%	-	100.00%	-	1.05	1.018817E-2	0.01
HPAHs	100.00%	1.7	100.00%	-	0.00%	-	100.00%	-	1.7	1.018817E-2	0.02
LPAHs	100.00%	193.75	100.00%	-	0.00%	-	100.00%	-	193.75	1.018817E-2	1.97
PCBs	100.00%	7.06	100.00%	-	0.00%	-	100.00%	-	7.06	1.018817E-2	0.07
DDx	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.00%	-	100.00%	-	0	1.018817E-2	0

Safety Kleen Envirosystems Co./McKesson Corp.

600 Doremus Ave

Newark

NJ

07105

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	4.04	1.925E-6	1.328E-6
Lead	0.01	3,200,000.00	13.41	4.191E-6	4.191E-8
Mercury	0.95	42,000.00	0.01	2.548E-7	2.420E-7
HPAHs	0.05	240,000.00	0.02	7.217E-8	3.608E-9
LPAHs	0.01	170,000.00	1.97	1.161E-5	1.161E-7
PCBs	12.87	26,000.00	0.07	2.766E-6	3.560E-5
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Safety Kleen Envirosystems Co./McKesson Corp.	600 Doremus Ave	Newark	NJ	07105
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	1.433E-3	4.04	3,004.35	1.433E-3	9.885E-4
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	4.562E-3	13.41	14,583.75	4.562E-3	4.562E-5
Mercury	0.95	42,000.00	4,322.53	41,955.96	2.430E-4	0.01	10.19	2.430E-4	2.308E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	3.911E-7	0.02	0.08	3.911E-7	1.956E-8
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	6.431E-5	1.97	8.96	6.431E-5	6.431E-7
PCBs	12.87	26,000.00	20,066.54	25,795.56	3.518E-4	0.07	9.08	3.518E-4	4.528E-3
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Safety Kleen Envirosystems Co./McKesson Corp.	600 Doremus Ave	Newark	NJ	07105
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Newark Bay	Bypass	0.00%	0.00%	Did not discharge waste into the Passaic river

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	1974-1977 direct discharge to Newark Bay/Passaic River
	# days/week discharged	1972 NPDES Permit = 14.4 MGD discharged Initially
	# weeks/yr discharged	0.092 MGD at end of First year FDR, Pages 13-14
33,580,000	# gals/yr directly discharged PAP00187067, PAP00185805	
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft2 per acre	
	acres	
50%	Percent Precip to River	
1974	Yr Ops started	
1977	Yr Ops ceased	
3.17	calc #yrs facility operated	FDR page 13
Copper (Cu)		
3.17	#yrs facility discharged	
0.07	calc mg/L COC discharged	Copper Discharge from 1982 sampling
3.785	L per gallon (Merck Index)	PAP-00185787-88
0.000001	kg per mg (Merck Index)	PAP-00187534
28.17	calc kg COC discharged	
Lead (Pb)		
3	#yrs facility discharged	Lead Discharge from NPDES DMRs
0.2600	calc mg/L COC discharged PAP00189054	PAP- 00185800; PAP-00185815
3.785	L per gallon (Merck Index)	PAP-00188983
0.000001	kg per mg (Merck Index)	PAP-00186123
104.65	calc kg COC discharged	
Mercury (Hg)		
3	#yrs facility discharged	Mercury Discharges from 1982 sampling
0.0001	calc mg/L COC discharged	PAP-00185448
3.785	L per gallon (Merck Index)	PAP-00185787-88
0.000001	kg per mg (Merck Index)	PAP-00187534
0.04	calc kg COC discharged	
HPAHs		
3	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
3	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
4	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-1	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
4	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
3	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
4	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
4	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
2	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
28.17	kg Copper	
-	kg Lead	
0.04	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	ASSUMPTIONS, REFERENCES	COMMENTS/NOTES
	4.083333333 FEET/YEAR AVERAGE PRECIPITATION	Long term average annual precipitation includes floods and hurricane events occurring over time.	Data from Rutgers University
	8.5 ACRES - TOTAL SITE AREA (acres)	FDR page 1	
	4.25 ACRES - AFFECTED AREA	The figure on PAP-00364114 appears to show about half of the total site area was covered by buildings or concrete	
	4,046.86 METERS ² /ACRE		
	17,199 METERS ² (AFFECTED AREA)		
	0.0001 METERS/YEAR (ERODED SOIL THICKNESS)	For this estimate, used a surface soil erosion rate of 0.1 mm/year, or 0.004 inches/year.	
	2 METERS ³ /YEAR (ERODED SOIL VOLUME)	VOLUME/YEAR DISCHARGED TO PASSAIC RIVER	
	1974 Year site operations began	Inland purchased certain assets of Vulcan on May 1, 1974; however, Vulcan would continue operation of their former chlor-alkali facilities, as well as their chloromethanes plant at the site until May 1, 1975. (FDR page 1)	
	1982 Year site was closed (due to explosion)	On October 10, 1982, an explosion and fire destroyed much of the facility and NJDEP closed the site two days later (FDR page 1)	According to a RCRA Facility Assessment Narrative, the site was being used by nearby industries as a parking lot and storage area for wastes and equipment after closure. (FDR page 5)
	1987 Year ownership transferred	Title transfer from Safety-Kleen to McKesson Corporation (FDR page 1)	
	13 NUMBER YEARS DISCHARGE		
	22 METERS ³ (TOTAL SOIL VOLUME DISCHARGED OVER TIME)		
	1962.5 KG/M3 SOIL DENSITY	Fill reported as sand and gravel containing ashes, cinders, slag, brick, and concrete rubble (PAP-00188318; PAP-00364135). Bulk density range 1442 KG/M3 to 2483 KG/M3, so use average. (http://structx.com/Soil_Properties_002.html).	
	43,879 KILOGRAMS (TOTAL SOIL DISCHARGED OVER TIME)		
Copper (Cu)	13 YEARS DISCHARGED		
	8,400 MG/KG (MAX CONCENTRATION)	Copper was found at a maximum concentration in surface soil at AEC 3 (SB-21, depth 0-6 inches) and AEC 4 (SB-18, depth 0-6 inches) (PAP-00188368 and PAP-00188372, respectively; Table on FDR page 20).	
	0.000001 kg per mg (Merck Index)		
	369 KILOGRAMS DISCHARGED		
Lead (Pb)	13 YEARS DISCHARGED		
	30,000 MG/KG (AVERAGE CONCENTRATION)	Maximum concentration found in surface sample at AEC 3 in SB-21, depth of 0-6 inches (FDR page 20; PAP-00188368)	
	0.000001 kg per mg (Merck Index)		
	1,316 KILOGRAMS DISCHARGED		

Mercury (Hg)	13 YEARS DISCHARGED 23 MG/KG (MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	1 KILOGRAMS DISCHARGED
PAHs (listed in Benzo(a)pyrene Equivalent conversion table)	
	13 YEARS DISCHARGED 38.749 MG/KG (TOTAL PAH MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	2 KILOGRAMS DISCHARGED
PAHs (others detected)	
	13 YEARS DISCHARGED 4416 MG/KG (TOTAL PAH MAX CONCENTRATION)
	0.000001 kg per mg (Merck Index)
	194 KILOGRAMS DISCHARGED
PCBs	
	13 YEARS DISCHARGED 161 MG/KG (MAX OF REPORTED CONCENTRATIONS)
	0.000001 kg per mg (Merck Index)
	7 KILOGRAMS DISCHARGED
SUMMARY CMASS ESTIMATES:	
368.59 kg Copper	
1,316.38 kg Lead	
1.01 kg Mercury	
1.70 kg PAHs (Benzo(a)pyrene Equivalent)	
193.75 kg PAHs (Other)	
7.06 kg PCBs	
1,888.49 MASS (KG) DISCHARGED FROM SURFACE SOIL	

Maximum concentration found in surface soil sample at AEC 6 in SB-28, depth of 0-6 inches (FDR page 20; PAP-00188380)

Total concentration of PAH compounds for Benzo(a)pyrene Equivalent
<https://floridadep.gov/waste/petroleum-restoration/documents/benzo-pyrene-equivalents-conversion-table-one-sample>.

Other PAHs = bis (2-ethylhexyl)phthalate, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene, and 2,4-dimethylphenol (PAP-00364271)

The highest concentration of PCBs was detected in a surface soil sample collected from soil boring SB-24 at a depth of 0 to 0.5 feet bgs at AEC 5 (FDR page 6; PAP-00364274)

Surface samples with highest concentrations from sample SB-5 or SB-7 at a depth of 0.0-0.5 OR 1.0-1.5 ft bgs. (PAP-00364271)	Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
	Benzo(a)pyrene	27.000	1.0	27.0000
	Benzo(a)anthracene	17.000	0.1	1.7000
	Benzo(b)fluoranthene	26.000	0.1	2.6000
	Benzo(k)fluoranthene	12.000	0.01	0.1200
	Chrysene	29.000	0.001	0.0290
	Diben(z,a,h)anthracene	6.100	1.0	6.1000
	Indeno(1,2,3-cd)pyrene	12.000	0.1	1.2000
	DE Residential = 0.1 mg/kg; DE Industrial = 0.7 mg/kg			
Total Benzo(a)pyrene Equivalents =			38.7	

According to a Remedial Action Report, dated August 2001, concentrations of PCBs in soils that exceeded 50 ppm were detected in the vicinity of one soil boring (SB-24). The extent of soils containing PCBs greater than 50 ppm was defined to be within a 50-foot by 20-foot rectangular area surrounding the soil boring. Soil that contained 50 ppm or more PCBs was excavated and disposed off-site (FDR Page 6-7)

For Public Disclosure by Consent of the Participating Allocation Parties and EPA (Fall 2022)
Case 2:22-cv-07326-MCA-LDW Document 289-16 Filed 01/31/24 Page 79 of 98 PageID: 7571

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Protocol Calculation								
Safety Kleen Envirosystems Co./McKesson Corp.								
600 Doremus Ave		Newark	NJ	07105				
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facility Adjusted BS	
3.734E-5	10.0%	Periodic Noncompliacne	At least 11 inspections conducted by NJDEP between January 18, 1980, and May 19, 1982, identified what was described as “leachate of an oil substance is presently entering Newark Bay” and/or “leachate into bay” and/or an “oil like material,” among other similar descriptions. The source of the discharge was documented as being unknown (PAP-00186512-21, 6530-1, 6881, 6908, 6913, 7305, 7310; PAP-00365518-9). dating back to 1979, NJDEP personnel had noted the following deficiencies at the facility: (1) poor, careless housekeeping resulting in extensive spillage; (2) a contaminated stormwater discharge into Newark Bay; (3) open drums in deteriorated condition stored in improper storage areas; (4) an oily material surfacing in the Newark Bay near the facility’s shoreline; and (5) a purple- colored groundwater discharge into Newark Bay (PAP-00185827). According to a Civil Action brought by the State of New Jersey against Inland, dated March 19, 1980, Inland failed to comply with and implement all of NJDEP's requirements of Inland’s Temporary Operating Authority; Inland since or from about October 30, 1979, had failed and continued to fail to comply with the October 30, 1979, Administrative Order; and, Inland's acts since or from about October 30, 1979, had constituted and continued to constitute pollution of the environment or a potential threat of pollution of the environment (PAP-00365511). According to a June 23, 1993, Administrative Consent Order, on October 30, 1979, the facility was issued an Administrative Order by the New Jersey Department of Environmental Protection and Energy (NJDEPE). The order stated that routine inspections conducted by NJDEPE on September 19, October 9, October 16 and October 24 revealed that the facility grounds were contaminated with various chemicals; therefore, the facility was to cease accepting waste and clean up all spills and contaminated soil (PAS-00011254). On October 10, 1982, an explosion and fire destroyed much of the facility. The New Jersey Department of Environmental Protection (NJDEP) closed the site two days later (PAS-00091937).		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	3.360E-5	
							AP_ABS	3.360E-5

For Public Disclosure by Consent of the Participating Allocation Parties and EPA (Fall 2022)
Case 2:22-cv-07326-MCA-LDW Document 289-16 Filed 01/31/24 Page 80 of 98 PageID: 7572

Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation								
Safety Kleen Envirosystems Co./McKesson Corp.								
600 Doremus Ave		Newark	NJ	07105				
Facility BS	CUF	CUF_Category	CUF_NOTES		COF	COF_NOTES	Facillty Adjusted BS	
5.794E-3	10.0%	Periodic Noncompliacne	At least 11 inspections conducted by NJDEP between January 18, 1980, and May 19, 1982, identified what was described as “leachate of an oil substance is presently entering Newark Bay” and/or “leachate into bay” and/or an “oil like material,” among other similar descriptions. The source of the discharge was documented as being unknown (PAP-00186512-21, 6530-1, 6881, 6908, 6913, 7305, 7310; PAP-00365518-9). dating back to 1979, NJDEP personnel had noted the following deficiencies at the facility: (1) poor, careless housekeeping resulting in extensive spillage; (2) a contaminated stormwater discharge into Newark Bay; (3) open drums in deteriorated condition stored in improper storage areas; (4) an oily material surfacing in the Newark Bay near the facility’s shoreline; and (5) a purple- colored groundwater discharge into Newark Bay (PAP-00185827). According to a Civil Action brought by the State of New Jersey against Inland, dated March 19, 1980, Inland failed to comply with and implement all of NJDEP's requirements of Inland’s Temporary Operating Authority; Inland since or from about October 30, 1979, had failed and continued to fail to comply with the October 30, 1979, Administrative Order; and, Inland's acts since or from about October 30, 1979, had constituted and continued to constitute pollution of the environment or a potential threat of pollution of the environment (PAP-00365511). According to a June 23, 1993, Administrative Consent Order, on October 30, 1979, the facility was issued an Administrative Order by the New Jersey Department of Environmental Protection and Energy (NJDEPE). The order stated that routine inspections conducted by NJDEPE on September 19, October 9, October 16 and October 24 revealed that the facility grounds were contaminated with various chemicals; therefore, the facility was to cease accepting waste and clean up all spills and contaminated soil (PAS-00011254). On October 10, 1982, an explosion and fire destroyed much of the facility. The New Jersey Department of Environmental Protection (NJDEP) closed the site two days later (PAS-00091937).		-20.0%	-20% CPG/SPG member - Continuous provision of funding and participation in PRP Group(s) actions to cooperate with governmental/regulatory entities to address environmental or public harm created by own activities	5.214E-3	
							AP_ABS	5.214E-3

Allocation Facility Cmass Calculation

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	49 4th Street	Newark	NJ
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	100.00%	-	100.00%	1,222.0	1,221.95	1.018817E-2	12.45
Lead	100.00%	-	100.00%	-	100.00%	-	100.00%	12.9	12.86	1.018817E-2	0.13
Mercury	100.00%	-	100.00%	-	100.00%	-	100.00%	0.3	0.33	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	12.45	5.928E-6	4.091E-6
Lead	0.01	3,200,000.00	0.13	4.096E-8	4.096E-10
Mercury	0.95	42,000.00	0	7.949E-8	7.552E-8
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	49 4th Street	Newark	NJ
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	4.412E-3	12.45	9,252.78	4.412E-3	3.044E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	4.458E-5	0.13	142.51	4.458E-5	4.458E-7
Mercury	0.95	42,000.00	4,322.53	41,955.96	7.581E-5	0	3.18	7.581E-5	7.202E-5
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	49 4th Street	Newark	NJ
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Passaic River		100.00%	100.00%	Facility operations prior to PVSC (1924)

Discharge Calcs	Direct Discharge Information		COMMENTS/NOTES
	# hours/day discharged		No information available on Sewer Discharges. Assuming similar to McCarter's Hwy since operation was at this location before moving to McCarter's Hwy in 1925
	# days/week discharged		PRP Extraction Form and Evidence Concerning: Schiffenhaus Packaging Corp:
	# weeks/yr discharged		* Wastewater to PVSC from 1909-1924 but most likely bypassed to the Passaic River
5,526,201	# gals/yr directly discharged		PAS00017807, 812, 999
			Flowrates from 1994, 1995 and 2005 data
	4.08	ft; 30yr average annual precipitation per Rutgers information	
		acres	
	43,560	ft2 per acre	
		acres	
	50%	Percent Precip to River	
	1909	Yr Ops started	
	1924	Yr Ops ceased	
	15	calc #yrs facility operated	
Copper (Cu)			
	15	#yrs facility discharged	From 1994, 2005 and 2006 sampling
	3.89	calc mg/L COC discharged PAS00017984, 800, 840	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	1,221.95	calc kg COC discharged	
Lead (Pb)			
	15	#yrs facility discharged	From 1994, 2005 and 2006 sampling
	0.0410	calc mg/L COC discharged PAS00017984, 800, 840	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	12.86	calc kg COC discharged	
Mercury (Hg)			
	15	#yrs facility discharged	
	0.00104	calc mg/L COC discharged PAS00017984, 800, 840	From 1994, 2005 and 2006 sampling
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	0.328	calc kg COC discharged	
HPAHs			
	15	#yrs facility discharged	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
LPAHs			
	15	#yrs facility discharged	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
PCBs			
	-4	#yrs facility discharged within PCBs Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
DDx			
	-15	#yrs facility discharged within DDx Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dieldrin			
	-25	#yrs facility discharged within Dieldrin Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxins/Furans			
	15	#yrs facility discharged	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D			
	-21	#yrs facility discharged within 2,4-D Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T			
	-20	#yrs facility discharged within 2,4,5-T Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP			
	-25	#yrs facility discharged within 2,4,6-TCP Timeline	
	-	calc mg/L COC discharged	
	3.785	L per gallon (Merck Index)	
	0.000001	kg per mg (Merck Index)	
	-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:			
	1,221.95	kg Copper	
	12.86	kg Lead	
	0.33	kg Mercury	
	-	kg HPAHs	
	-	kg LPAHs	
	-	kg PCBs	
	-	kg DDx	
	-	kg Dieldrin	
	-	kg Dioxins/Furans	

Allocation Facility Cmass Calculation

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	204 Academy Street	Newark	NJ
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	100.00%	-	100.00%	1,059.0	1,059.03	1.018817E-2	10.79
Lead	100.00%	-	100.00%	-	100.00%	-	100.00%	11.1	11.15	1.018817E-2	0.11
Mercury	100.00%	-	100.00%	-	100.00%	-	100.00%	0.3	0.28	1.018817E-2	0
HPAHs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	100.00%	-	100.00%	-	0	1.018817E-2	0

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	204 Academy Street	Newark	NJ
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	10.79	5.138E-6	3.545E-6
Lead	0.01	3,200,000.00	0.11	3.549E-8	3.549E-10
Mercury	0.95	42,000.00	0	6.889E-8	6.545E-8
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	204 Academy Street	Newark	NJ
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	3.824E-3	10.79	8,019.07	3.824E-3	2.638E-3
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	3.863E-5	0.11	123.51	3.863E-5	3.863E-7
Mercury	0.95	42,000.00	4,322.53	41,955.96	6.570E-5	0	2.76	6.570E-5	6.242E-5
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	204 Academy Street	Newark	NJ
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Passaic River		100.00%	100.00%	Facility operations prior to PVSC (1924)

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	No information available on Sewer Discharges. Assuming similar to McCarter's Hwy since operation was at this location before moving to 4th Street in 1909.
	# days/week discharged	PRP Extraction Form and Evidence Concerning: Schiffenhaus Packaging Corp:
	# weeks/yr discharged	* Wastewater to PVSC from 1909-1924 most likely bypassed to the Passaic River
5,526,201	# gals/yr directly discharged	PAS00017807, 812, 999
		Flowrates from 1994, 1995 and 2005 data
4.08	ft; 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft ² per acre	
	acres	
50%	Percent Precip to River	
1895	Yr Ops started	
1908	Yr Ops ceased	
13	calc #yrs facility operated	
Copper (Cu)		
13	#yrs facility discharged	From 1994, 2005 and 2006 sampling
3.89	calc mg/L COC discharged PAS00017984, 800, 840	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1,059.02	calc kg COC discharged	
Lead (Pb)		
13	#yrs facility discharged	From 1994, 2005 and 2006 sampling
0.0410	calc mg/L COC discharged PAS00017984, 800, 840	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
11.15	calc kg COC discharged	
Mercury (Hg)		
13	#yrs facility discharged	
0.00104	calc mg/L COC discharged PAS00017984, 800, 840	From 1994, 2005 and 2006 sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.284	calc kg COC discharged	
HPAHs		
13	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
13	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
-20	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-31	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
-41	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
13	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
-37	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
-36	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
-41	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
1,059.02	kg Copper	
11.15	kg Lead	
0.28	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Allocation Facility Cmass Calculation

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	2013 McCarter Highway	Newark	NJ
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Constituent Of Concern (COC)	Overland, Fate & Transport C%	Dmass Overland, Fate & Transport	PrePVSC C%	Dmass PrePVSC	PVSC C%	Dmass PVSC	Direct Discharge C%	Dmass Direct Discharge	COC Total Pathway Cmass	COC A%	COC Historic CMass
Copper	100.00%	-	100.00%	-	0.19%	2,606.83	100.00%	4,154.6	4,159.6	1.018817E-2	42.38
Lead	100.00%	-	100.00%	-	0.19%	27.44	100.00%	43.7	43.79	1.018817E-2	0.45
Mercury	100.00%	-	100.00%	-	0.19%	0.70	100.00%	1.1	1.12	1.018817E-2	0.01
HPAHs	100.00%	-	100.00%	-	0.19%	-	100.00%	-	0	1.018817E-2	0
LPAHs	100.00%	-	100.00%	-	0.19%	-	100.00%	-	0	1.018817E-2	0
PCBs	100.00%	-	100.00%	-	0.19%	-	100.00%	-	0	1.018817E-2	0
DDx	100.00%	-	100.00%	-	0.19%	-	100.00%	-	0	1.018817E-2	0
Dieldrin	100.00%	-	100.00%	-	0.19%	-	100.00%	-	0	1.018817E-2	0
Dioxins_Furans	100.00%	-	100.00%	-	0.19%	-	100.00%	-	0	1.018817E-2	0

Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	COC Historic CMass	COC Relative Contribution	COC Base Score
Copper	0.69	2,100,000.00	42.38	2.018E-5	1.392E-5
Lead	0.01	3,200,000.00	0.45	1.394E-7	1.394E-9
Mercury	0.95	42,000.00	0.01	2.706E-7	2.571E-7
HPAHs	0.05	240,000.00	0	0	0
LPAHs	0.01	170,000.00	0	0	0
PCBs	12.87	26,000.00	0	0	0
DDx	1.37	27,000.00	0	0	0
Dieldrin	0.13	390.00	0	0	0
Dioxins_Furans	83.92	38.00	0	0	0

Allocation Facility COC Base Scores - Alternative Calulcation

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	2013 McCarter Highway	Newark	NJ
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Constituent Of Concern (COC)	Relative Risk Number (RRN)	Total Mass (Tmass)	Total Cmass (TCmass)	Total OS COC ACmass	COC %	COC Historic CMass	Facility OS COC Cmass	COC Relative Responsibility	COC Base Score
Copper	0.69	2,100,000.00	276,960.25	2,097,178.28	1.502E-2	42.38	31,496.99	1.502E-2	1.036E-2
Lead	0.01	3,200,000.00	288,577.67	3,197,059.92	1.517E-4	0.45	485.12	1.517E-4	1.517E-6
Mercury	0.95	42,000.00	4,322.53	41,955.96	2.581E-4	0.01	10.83	2.581E-4	2.452E-4
HPAHs	0.05	240,000.00	4,346,388.50	195,718.24	0	0	0	0	0
LPAHs	0.01	170,000.00	3,012,835.14	139,304.72	0	0	0	0	0
PCBs	12.87	26,000.00	20,066.54	25,795.56	0	0	0	0	0
DDx	1.37	27,000.00	2,516.93	26,974.36	0	0	0	0	0
Dieldrin	0.13	390.00	1.27	389.99	0	0	0	0	0
Dioxins_Furans	83.92	38.00	3,729.82	0.00	0	0	0	0	0

Facility Bypass Information

Schiffenhaus Packaging Corp. (Rock-Tenn Company)	2013 McCarter Highway	Newark	NJ
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Item	Bypass Name	Bypass Type	Time %	Flow %	Bypass Notes
1	Delavan	CSO	0.46%	41.36%	No overflows were observed for the Killiam Report. CSO percentages were calculated by the median of all CSOs in the Newark municipality

Discharge Calcs	POTW Discharge Information	COMMENTS/NOTES
	gal discharged per day/week/month	PRP Extraction Form and Evidence Concerning: Schiftenhaus Packaging Corp:
	# hours/per day discharged	* Wastewater to PVSC from 1924-1975 most likely bypassed to the Passaic River
	#days/week discharged	PAS00017807, 812, 999
	#weeks/yr discharged	Flowrates from 1994, 1995 and 2005 data
5,526,201	calc gal/yr discharge	
1976	Yr Ops started	
2007	Yr Ops ceased	
32	calc #yrs facility operated	
Copper (Cu)		
32	#yrs facility discharged	From 1994, 2005 and 2006 sampling
3.89	calc mg/L COC discharged PAS00017984, 800, 840	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
2,606.83	calc kg COC discharged	
Lead (Pb)		
32	#yrs facility discharged	From 1994, 2005 and 2006 sampling
0.0410	calc mg/L COC discharged PAS00017984, 800, 840	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
27.44	calc kg COC discharged	
Mercury (Hg)		
32	#yrs facility discharged	
0.00104	calc mg/L COC discharged PAS00017984, 800, 840	From 1994, 2005 and 2006 sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
0.70	calc kg COC discharged	
HPAHs		
32	#yrs facility discharged	
-	calc mg/L O&G	
10%	% O&G that is considered PAHs	
50%	% COC in O&G considered as PAHs	
-	calc mg/L HPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
32	#yrs facility discharged	
-	calc mg/L O&G	
10%	% O&G that is considered PAHs	
50%	% COC in O&G considered as PAHs	
-	calc mg/L LPAHs	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
2	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
-3	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
12	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
32	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
32	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
10	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
0	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for POTW:		
2,606.83	kg Copper	
27.44	kg Lead	
0.70	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Discharge Calcs	Direct Discharge Information	COMMENTS/NOTES
	# hours/day discharged	PRP Extraction Form and Evidence Concerning: Schifffenhaus Packaging Corp:
	# days/week discharged	* Wastewater to PVSC from 1924-1975 most likely bypassed to the Passaic River
	# weeks/yr discharged	PAS00017807, 812, 999
5,526,201	# gals/yr directly discharged	Flowrates from 1994, 1995 and 2005 data
4.08	ft: 30yr average annual precipitation per Rutgers information	
	acres	
43,560	ft ² per acre	
	acres	
50%	Percent Precip to River	
1924	Yr Ops started	
1975	Yr Ops ceased	
51	calc #yrs facility operated	
Copper (Cu)		
51	#yrs facility discharged	From 1994, 2005 and 2006 sampling
3.89	calc mg/L COC discharged PAS00017984, 800, 840	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
4,154.64	calc kg COC discharged	
Lead (Pb)		
51	#yrs facility discharged	From 1994, 2005 and 2006 sampling
0.0410	calc mg/L COC discharged PAS00017984, 800, 840	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
43.74	calc kg COC discharged	
Mercury (Hg)		
51	#yrs facility discharged	
0.00104	calc mg/L COC discharged PAS00017984, 800, 840	From 1994, 2005 and 2006 sampling
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
1.114	calc kg COC discharged	
HPAHs		
51	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
LPAHs		
51	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
PCBs		
47	#yrs facility discharged within PCBs Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
DDx		
33	#yrs facility discharged within DDx Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dieldrin		
26	#yrs facility discharged within Dieldrin Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxins/Furans		
51	#yrs facility discharged	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4-D		
30	#yrs facility discharged within 2,4-D Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,5-T		
31	#yrs facility discharged within 2,4,5-T Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Dioxin/Furan Precursor - 2,4,6-TCP		
26	#yrs facility discharged within 2,4,6-TCP Timeline	
-	calc mg/L COC discharged	
3.785	L per gallon (Merck Index)	
0.000001	kg per mg (Merck Index)	
-	calc kg COC discharged	
Summary DMassCOC for Direct Discharge:		
4,154.64	kg Copper	
43.74	kg Lead	
1.11	kg Mercury	
-	kg HPAHs	
-	kg LPAHs	
-	kg PCBs	
-	kg DDx	
-	kg Dieldrin	
-	kg Dioxins/Furans	

Schiffenhaus Packaging Corp. (Rock-Tenn Company)

49 4th Street			Newark	NJ		
Facility BS	CUF	CUF_Category	CUF_NOTES	COF	COF_NOTES	Facility Adjusted BS
4.166E-6	0.0%	Historically Compliant or No Evidence	No information on violations or sloppy practices was identified in the available file material.	20.0%	20% Failed to participate in conduct of allocation as offered by EPA	5.000E-6

AP_ABS	2.777E-5
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For Public Disclosure by Consent of the Participating Allocation Parties and EPA (Fall 2022)
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Facility Base Scores, Culpability Factor, Cooperation Factor and Adjusted Base Scores - Allocation Calculation									
Schiffenhaus Packaging Corp. (Rock-Tenn Company)									
204 Academy Street			Newark	NJ					
Facility BS	CUF	CUF_Category		CUF_NOTES		COF	COF_NOTES		Facillty Adjusted BS
2.701E-3	0.0%	Historically Compliant or	No Evidence	No information on violations or sloppy practices was identified in the available file material.		20.0%	20%	Failed to participate in conduct of allocation as offered by EPA	3.241E-3
49 4th Street			Newark	NJ					
Facility BS	CUF	CUF_Category		CUF_NOTES		COF	COF_NOTES		Facillty Adjusted BS
3.117E-3	0.0%	Historically Compliant or	No Evidence	No information on violations or sloppy practices was identified in the available file material.		20.0%	20%	Failed to participate in conduct of allocation as offered by EPA	3.740E-3
2013 McCarter Highway			Newark	NJ					
Facility BS	CUF	CUF_Category		CUF_NOTES		COF	COF_NOTES		Facillty Adjusted BS
1.061E-2	10.0%	Periodic Noncompliacne		A NOV was issued by PVSC to Schiffenhaus for a copper exceedance in October 1996. Schiffenhaus subsequently advised in a July 1996 letter that the copper source may be copper phthalocyanine pigments (PAS-00017812; PAS-00017942; PAS-00017954). In May 1995, Schiffenhaus was “out of compliance” with “Local Pretreatment Limitations” for copper (PAS-00017986-87). Reportedly, the facility was over the “threshold limit” for cadmium, chromium, copper, mercury and lead (PAS-00017991). In January 1997, a NOV was issued by PVSC to Schiffenhaus due to the facility's failure to meet compliance milestones established in its Sewer Connection Permit for “local limits” on metals. PVSC advised that Schiffenhaus was determined to be in "significant non-compliance" with PVSC rules and regulations (PAS-00017812; PAS-00017941-42). On October 17, 1997, PVSC filed a complaint in the Superior Court of the State of New Jersey against Schiffenhaus. The complaint alleged that Schiffenhaus violated its PVSC discharge permit by not being in compliance with “local pretreatment limits” established by the permit. Schiffenhaus agreed to pay a fine of \$1,000 to settle the PVSC legal action (PAS-00017813; PAS-00017933).		20.0%	20%	Failed to participate in conduct of allocation as offered by EPA	1.379E-2
								AP_ABS	2.077E-2